Bozin, Sunny

From: Nieh, Ho
Sent: Thursday, March 17, 2011 6:23 PM
To: Ostendorff, William
Subject: RE: Time for our bosses to talk tomorrow

Sir - link to POTUS address if you did not view it is below...

http://www.msnbc.msn.com/id/21134540/vp/42136475#42136475

Also thought this article highlighted the gravity and human impacts of the situation...

http://abcnews.go.com/International/relatives-break-silence-japans-heroes-fukushima-50/story?id=13155666&page=3

Ho

Ho Nieh
Chief of Staff
Office of Commissioner William C. Ostendorff U.S. Nuclear Regulatory Commission
(301) 415-1811 (office)
(b)(6) (mobile)
(301) 415-1757 (fax)
ho.nieh@nrc.gov

From: Ostendorff, William
Sent: Thursday, March 17, 2011 6:20 PM
To: Nieh, Ho
Subject: Re: Time for our bosses to talk tomorrow

Not really-we did discuss in our 4 pm Comm phone call but only briefly.

----- Original Message -----
From: Nieh, Ho
To: Ostendorff, William
Sent: Thu Mar 17 18:17:21 2011
Subject: RE: Time for our bosses to talk tomorrow

BTW - I just watched Obama's address - he said he directed the NRC to conduct a review.

Do you know anymore details about that?

Ho

Ho Nieh
Chief of Staff
Office of Commissioner William C. Ostendorff U.S. Nuclear Regulatory Commission
(301) 415-1811 (office)
(b)(6)
(301) 415-1757 (fax)
ho.nieh@nrc.gov

From: Ostendorff, William

000301

Sent: Thursday, March 17, 2011 6:17 PM
To: Nieh, Ho
Subject: Re: Time for our bosses to talk tomorrow

That's fine.

----- Original Message -----
From: Nieh, Ho
To: Ostendorff, William
Sent: Thu Mar 17 18:07:33 2011
Subject: FW: Time for our bosses to talk tomorrow

fyi

Ho Nieh
Chief of Staff
Office of Commissioner William C. Ostendorff U.S. Nuclear Regulatory Commission
(301) 415-1811 (office)
(b)(6) (mobile)
(301) 415-1757 (fax)
ho.nieh@nrc.gov

From: Bubar, Patrice
Sent: Thursday, March 17, 2011 5:43 PM
To: Nieh, Ho
Subject: Time for our bosses to talk tomorrow

Ho – Commissioner Magwood was hoping to have some time to meet with your boss tomorrow – as a follow up to the call with the Chairman today and before the Commission meeting next week.

Do you think we could find time at 10:30 tomorrow –after their meeting on the Resident Inspector/Relocation program?

Carrie will be following up with Linda or Sunny.

Patty Bubar
Chief of Staff
Office of Commissioner William D. Magwood U.S. Nuclear Regulatory Commission
301-415-1895

, NRR

From: Gray, Kathy
To: Thomas, Eric; King, Mark; Thorp, John; Brown, Frederick; Leeds, Eric; Boger, Bruce; Grobe, Jack
Cc: Rihm, Roger; Bowman, Eric; Garmon-Candelaria, David
Subject: RE: INPO Event Report Level 1 on Japanese Earthquake
Date: Thursday, March 17, 2011 12:32:10 PM

The INPO document has been posted ... IER L1-11-1 - Fukushima Daiichi Nuclear Station Fuel Damage Caused by Earthquake and Tsunami

REL

From: Thomas, Eric / NRR
Sent: Wednesday, March 16, 2011 1:43 PM
To: King, Mark; Thorp, John; Brown, Frederick; Leeds, Eric; Boger, Bruce; Grobe, Jack
Cc: Rihm, Roger; Bowman, Eric; Gray, Kathy; Garmon-Candelaria, David
Subject: INPO Event Report Level 1 on Japanese Earthquake

We will post this to the INPO Documents link on the OpE Gateway as soon as possible.

Eric

Eric Thomas
U.S. Nuclear Regulatory Commission
NRR/DIRS/IOEB
OWFN-7E24
eric.thomas@nrc.gov
301-415-6772 (office)
(b)(6)

000/302

Nelson, Robert

From: Nelson, Robert
Sent: Thursday, March 17, 2011 3:18 PM
To: Hall, Randy
Subject: RE: SONGS Tour for California senators

Thanks. We'll be working with the Region on Qs & As

NELSON

From: Hall, Ranc
Sent: Thursday, March 17, 2011 2:01 PM
To: Nelson, Robert; Markley, Michael; Giitter, Joseph
Cc: Howe, Allen
Subject: FW: SONGS Tour for California senators

Joe, Nelson, and Mike,

Looks like Senators Boxer and Feinstein will be visiting SONGS (Briefly) this Tuesday, March 22, with Commissioner Apostolakis and Elmo Collins.

Randy

From: Weil, Jenny
Sent: Thursday, March 17, 2011 1:06 PM
To: Schmidt, Rebecca; Powell, Amy; Hall, Randy; Lantz, Ryan; Uselding, Lara
Subject: Fw: SONGS Tour for California senators

This is the current schedule proposed by Feinstein/Boxer's staff, though they might try to see if Senators' schedule allow for more than an hour at the plant, per SCE's request.

Sent via BlackBerry
Jenny Weil
Congressional Affairs Officer
U.S. Nuclear Regulatory Commission
(b)(6)

From: Field, Katherine (Feinstein) <Katherine_Field@feinstein.senate.gov>
To: Weil, Jenny; Kathy.Yhip@sce.com <Kathy.Yhip@sce.com>
Cc: Bohigian, Tom (Boxer) <Tom_Bohigian@boxer.senate.gov>; Kaneko, Nicole (Boxer) <Nicole_Kaneko@boxer.senate.gov>; Kalligeros, Maria (Boxer) <Maria_Kalligeros@boxer.senate.gov>; Nelson, Matthew (Feinstein) <Matthew_Nelson@feinstein.senate.gov>; Clapp, Doug (Appropriations) <Doug_Clapp@appro.senate.gov>
Sent: Thu Mar 17 12:38:25 2011
Subject: SONGS Tour

Hi Kathy, Jenny,

Both Senator Feinstein and Senator Boxer are scheduled to tour SONGS at 1:30pm on Tuesday, March 22nd. This is the schedule I put together after advancing the site with Kathy on Tuesday. I have included Senator Boxer's staff on this email as well. Can you please advise us on the schedule, logistics and security required for the visit?

000303

SONGS Tour

1:30pm

- From the gate , car tour to over look of the Power Plant.
  - The View will be of the Reactors, Holding Pools and sea wall

  This will take 15 minutes.
- Then proceed to the actual power plant where the reactors are.
  Security, sign in and base line radiation will be taken at this time. This should take 15 min.

1:45 pm

- Tour the facility

2:00 pm

- **Meeting with below, in conference room**

- US Senator Dianne Feinstein
- US Senator Barbara Boxer
- George Apostolakis, Commissioner, U.S. Nuclear Regulatory Commission
- Elmo Collins, Jr., Regional Administrator, U.S. Nuclear Regulatory Commission
- David Applegate, Senior Science Advisor for Earthquake & Geologic Hazards, U.S. Geologic Survey
- Pete Dietrich, Senior Vice President and Chief Nuclear Officer, Southern California Edison

2:30 pm **Depart for San Diego**

Thank you!

Katherine Field
U.S. Senator Dianne Feinstein
750 B Street, Suite 1030
San Diego, California 92101
(p) 619-231-9712 (f) 619-231-1108

Nelson, Robert

From: Nelson, Robert
Sent: Thursday, March 17, 2011 11:06 AM
To: Lara, Julio
Subject: RE: Event Response - Communications and Qs&As
Attachments: image001.png

Great suggestion

NELSON

From: Lara, Julio
Sent: Thursday, March 17, 2011 11:02 AM
To: Nelson, Robert
Subject: FW: Event Response - Communications and Qs&As

Bob,

I understand that Cindy Pederson informed you that I am the POC for RIII. I work for Steve West – DRP Director.

One initial piece of information we would like to obtain is the listing that was generated earlier this week for the Chairman regarding SSE, OBE, ... from the FSARs. NRR developed this listing for all plants. It will be useful and avoid our research to gather same.

If you can obtain it, maybe you can forward to the Regional group members.

julio

From: Wert, Leonard
To: Lew, David; Pederson, Cynthia; Howell, Art
Sent: Wed Mar 16 16:05:18 2011
Subject: Fw: Event Response - Communications and Qs&As

FYI

This email is being sent from an NRC Blackberry device.

From: Wert, Leonard
To: Nelson, Robert
Cc: Croteau, Rick; Gody, Tony; Cobey, Eugene
Sent: Wed Mar 16 15:58:43 2011
Subject: RE: Event Response - Communications and Qs&As

Bob,
Sounds like a good plan from here. The Region II POC for this will be Rick Croteau, DRP Division Director. Just one quick note, we will also start conducting our DFFI LPR public meetings soon, so DFFI management will also be interested in at least some of the Q&As and any other preparations for public meetings.

Len

000/304

From: Nelson, Robert
Sent: Wednesday, March 16, 2011 3:13 PM
To: Lew, David; Wert, Leonard; Pederson, Cynthia; Howell, Arthur
Cc: Giitter, Joseph; Leeds, Eric; Boger, Bruce; Ruland, William; Meighan, Sean; Nguyen, Quynh; Thomas, Eric; Thorp, John
Subject: Event Response - Communications and Qs&As

I've been assigned as the NRR Communications Coordinator for matters dealing with our response to the events in Japan.

1. I understand that you were recently sent the Chairman's Qs&As. I understand that EOC meetings are beginning next week and the regional staff need to be prepared for stakeholder questions that will arise regarding the events & our plants. Are these Qs&As sufficient? If not, what additional areas do you want addressed?
2. Please identify a POC in your region that my team & I can coordinate with on communications issues.
3. I understand that a concern was raised about the Ops Center contacting a family member and that a protocol is needed for such contact. I'm working on it.
4. We will likely formulate a "tiger team" to prepare responses to written inquiries. I'll keep you advised.
5. Communications with the regions, particularly those requesting information regarding specific plants, should be coordinated thru my team. If you have concerns in this regard, please contact me.

R.A. Nelson

Robert A. Nelson
Deputy Director
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation
U.S.NRC
United States Nuclear Regulatory Commission
Protecting People and the Environment
E-mail: robert.nelson@nrc.gov | Office: (301) 415-1453 | Cell (b)(6) Fax: (301) 415-2102|

Nelson, Robert

From: Nelson, Robert
Sent: Thursday, March 17, 2011 7:37 AM
To: Howell, Art
Subject: RE: Event Response - Communications and Qs&As
Attachments: image001.png

Thanks!. I apologize for the error.

NELSON

From: Howell, Art
Sent: Wednesday, March 16, 2011 4:30 PM
To: Nelson, Robert
Subject: FW: Event Response - Communications and Qs&As

Bob,

Kriss Kennedy is the RIV POC. Also, my email address is: art.howell@nrc.gov. Arthur Howell is another NRC employee.

Thanks,

Art

From: Wert, Leonard
Sent: Wednesday, March 16, 2011 3:05 PM
To: Lew, David; Pederson, Cynthia; Howell, Art
Subject: Fw: Event Response - Communications and Qs&As

FYI

This email is being sent from an NRC Blackberry device.

From: Wert, Leonard
To: Nelson, Robert
Cc: Croteau, Rick; Gody, Tony; Cobey, Eugene
Sent: Wed Mar 16 15:58:43 2011
Subject: RE: Event Response - Communications and Qs&As

Bob,
Sounds like a good plan from here. The Region II POC for this will be Rick Croteau, DRP Division Director. Just one quick note, we will also start conducting our DFFI LPR public meetings soon, so DFFI management will also be interested in at least some of the Q&As and any other preparations for public meetings.

Len

From: Nelson, Robert
Sent: Wednesday, March 16, 2011 3:13 PM
To: Lew, David; Wert, Leonard; Pederson, Cynthia; Howell, Arthur
Cc: Glitter, Joseph; Leeds, Eric; Boger, Bruce; Ruland, William; Meighan, Sean; Nguyen, Quynh; Thomas, Eric; Thorp,

000|305

John
Subject: Event Response - Communications and Qs&As

I've been assigned as the NRR Communications Coordinator for matters dealing with our response to the events in Japan.

1. I understand that you were recently sent the Chairman's Qs&As. I understand that EOC meetings are beginning next week and the regional staff need to be prepared for stakeholder questions that will arise regarding the events & our plants. Are these Qs&As sufficient? If not, what additional areas do you want addressed?
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4. We will likely formulate a "tiger team" to prepare responses to written inquiries. I'll keep you advised.
5. Communications with the regions, particularly those requesting information regarding specific plants, should be coordinated thru my team. If you have concerns in this regard, please contact me.

R. A. Nelson

Robert A. Nelson
Deputy Director
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10

From:	Kammerer, Annie
To:	Kammerer, Annie; Hiland, Patrick; Skeen, David; Case, Michael; RST01 Hoc
Cc:	Howe, Allen; Nelson, Robert; Stutzke, Martin; Giitter, Joseph; Rihm, Roger; McDermott, Brian; Hasselberg, Rick; Chokshi, Nilesh; Munson, Clifford; Cook, Christopher; Flanders, Scott; Ross-Lee, MaryJane; Brown, Frederick; Giitter, Joseph; Howe, Allen; Ruland, William; Dudes, Laura; Karas, Rebecca; Ake, Jon; Munson, Clifford; Hogan, Rosemary; Uhle, Jennifer; Marshall, Michael; Uselding, Lara; Randall, John; Allen, Don; Burnell, Scott; Hayden, Elizabeth; Pires, Jose; Graves, Herman; Candra, Hernando; Murphy, Andrew; Murphy, Andrew; Pires, Jose; Hogan, Rosemary; Sheron, Brian; Dricks, Victor; Warnick, Greg; Reynoso, John; Lantz, Ryan; Markley, Michael; Orders, William; Santiago, Patricia; Snodderly, Michael; Baggett, Steven; Sosa, Belkys; Davis, Roger; Franovich, Mike; Castleman, Patrick; Sharkey, Jeffry; Boska, John; Ma, John; Tegeler, Bret; Patel, Pravin; Shams, Mohamed; Morris, Scott; Brenner, Eliot; Harrington, Holly; Seber, Dogan; Ledford, Joey; Johnson, Michael; Virgilio, Martin; Holahan, Vincent; Bergman, Thomas
Subject:	Seismic Q&As March 17th 2am update
Date:	Thursday, March 17, 2011 2:36:51 AM
Attachments:	Seismic Questions for Incident Response 3-17-11 2am.pdf

All,

As promised, a sharepoint site has been set up where our friends in NRR will be posting the latest version of the Seismic Q&A document on an ongoing basis. If someone would prefer to use the sharepoint site, instead of being on this distribution list, please let me know...

http://portal.nrc.gov/edo/nrr/NRR%20TA/FAQ%20Related%20to%20Events%20Occuring%20in%20Japan/Forms/AllItems.aspx

This latest update has a number of new questions (not many with answers today, but we are working hard). A high priority question we are working on is "how many plants are near a mapped active fault". We're focusing on anything within 50 miles. We're also pulling relevant questions from the congressional inquiries we just received; and will also give these high priority to support any needs by NRR.

Many new figures and some draft fact sheets have added to the "additional information" section. These include the NRO half of a tsunami fact sheet...a description of the tsunami research is still to come from RES.

Some good news: Yesterday's version seems to have been widely forwarded around the agency. So, we are also starting to get some excellent questions from staff looking forward. This is allowing us to feel that we are finally getting out in front of things to a small degree. Also, our team has grown and we now have someone acting as source of seismic expertise for the 11pm to 7 am shift. This means that we now have seismic experts available to the RST and OPA at the Op Center 24 hours, with 2 people during the day. That extra support is allowing us to get this out at least an hour earlier today ☺

We are continuing to compile the questions that come in and update the seismic Q&A document. If you have suggested changes, or want to provide missing answers, please forward them to me for compilation.

This is a living document and will be updated daily in the foreseeable future.

Happy St. Paddy's Day. May the world (especially our friends in Japan) have the luck of the Irish today.

Cheers,
Annie

Dr. Annie Kammerer, PE
Senior Seismologist and Earthquake Engineer
US Nuclear Regulatory Commission
Office of Nuclear Regulatory Research
Washington DC 20555
(b)(6) mobile
B

From: Kammerer, Annie
Sent: Tuesday, March 15, 2011 3:41 AM
To: Hiland, Patrick; Skeen, David
Cc: Howe, Allen; Nelson, Robert; Stutzke, Martin; Giitter, Joseph; Rihm, Roger; McDermott, Brian; Hasselberg, Rick; Kammerer, Annie; Chokshi, Nilesh; Munson, Clifford; Cook, Christopher; Flanders, Scott; Ross-Lee, MaryJane; Brown, Frederick; Giitter, Joseph; Howe, Allen; Case, Michael; Ruland, William; Dudes, Laura; Karas, Rebecca; Ake, Jon; Munson, Clifford; Hogan, Rosemary; Uhle, Jennifer; Marshall, Michael; Uselding, Lara; Randall, John; Allen, Don; Burnell, Scott; Hayden, Elizabeth; Pires, Jose; Graves, Herman; Candra, Hernando; Murphy, Andrew; Murphy, Andrew; Pires, Jose; Hogan, Rosemary; Sheron, Brian; Dricks, Victor; Warnick, Greg; Reynoso, John; Lantz, Ryan; Markley, Michael
Subject: latest version of Q&As

All,

This is the first draft of the seismic-specific Q&As. It is pretty rough and there are many answers still missing, but people have contributed a lot and we thought it may be useful for many people trying to answer questions coming in.

We are continuing to compile the questions that come in and update the seismic Q&A document. If you have suggested changes, or want to provide missing answers, please forward them to me for compilation.

000 1306

This is a living document and will be updated daily in the foreseeable future.

Annie

Dr. Annie Kammerer, PE
Senior Seismologist and Earthquake Engineer
US Nuclear Regulatory Commission
Office of Nuclear Regulatory Research
Washington DC 20555
(b)(6) mobile
BB

Compiled Seismic Questions for NRC Response to the March 11, 2001 Japanese Earthquake and Tsunami

This is current as of 3-17-11 at 2am.

The keeper of this file is Annie Kammerer. Please provide comments, additions and updates to Annie with CC to Clifford Munson and Jon Ake.

A SharePoint site has been set up so that anyone can download the latest Q&As. The site is found at NRC>NRR>NRR TA or at *http://portal.nrc.gov/edo/nrr/NRR%20TA/FAQ%20Related%20to%20Events%20Occuring%20in%20Japan/Forms/AllItems.aspx*

A list of topics is shown in the Table of Contents at the front of this document.

A list of all questions is provided at the end of the document.

We greatly appreciate the assistance of the many people who have contributed. The enclosed list of questions and answers has been compiled from multiple sources including, questions forwarded from NRC staff, GI-199 communications plan, Diablo Canyon communications plan, the NEI website, lists of questions that followed the 2007 earthquake that shut down the Kashiwazaki-Kariwa plant, and others. Please do not distribute beyond the NRC.

CONTENTS

Natural Hazards and Ground Shaking Design Levels

1) Did the Japanese underestimate the size of the maximum credible earthquake that could affect the plants?

Public response: The magnitude of the earthquake was somewhat greater than was expected for that part of the subduction zone by seismologists worldwide. The Japanese plants were recently reviewed to ground shaking similar to that observed. The review level ground motions were expected to result from a smaller earthquake closer to the sites.

Additional, technical, non-public information: None.

2) Can a very large earthquake and tsunami happen here?

Public response: This earthquake was caused by a "subduction zone" event, which is the type of mechanism that produces the largest magnitude earthquakes. A subduction zone is a tectonic plate boundary where one tectonic plate is pushed under another plate. In the continental US, the only subduction zone is the Cascadia subduction zone which lies off the coast of northern California, Oregon and Washington. So, an earthquake and tsunami this large could only happen in that region. The only plant in that area is Columbia, which is far from the coast and the subduction zone. Outside of the Cascadia subduction zone, earthquakes are not expected to exceed a magnitude of approximate 8, which is 10 times smaller than a magnitude 9.

Additional, technical, non-public information: Magnitude is on a log scale, so 9 is 10 times bigger than an 8.

3) Has this changed our perception of Earthquake risk?

Public Answer: This does not change the NRC's perception of earthquake hazard (i.e. ground shaking) at US plants. It is too early to tell what the lessons from this earthquake are from an engineering perspective. The NRC will look closely at all aspects of response of the plants to the earthquake and tsunami to determine if any actions need to be taken in US plants and if any changes are necessary to NRC regulations.

Additional, technical, non-public information: We expect that there would be lessons learned and we may need to seriously relook at common cause failures, including dam failure and tsunami.

4) What magnitude earthquake are US plants designed to?

Public Answer: Each plant is designed to a ground-shaking level that is appropriate for its location, given the possible earthquake sources that may affect the site and its tectonic environment. Ground shaking is a function of both the magnitude of an earthquake and the distance from the fault to the site. The magnitude alone cannot be used to predict ground motions. The existing plants were designed on a "deterministic" or "scenario earthquake" basis that accounted for the largest earthquake expected in the area around the plant. Several tables that include plant design ground motions are provided as the first table in the "additional information" section of this document.

Additional, technical non-public information: In the past, "deterministic" or "scenario based" analyses were used to determine ground shaking (seismic hazard) levels. Now a probabilistic method is used that accounts for possible earthquakes of various magnitudes that come from potential sources (including background seismicity) and the likelihood that each particular hypothetical earthquake occurs.

5) How many US reactors are located in active earthquake zones (and which reactors)?

Public Answer: Although we often think of the U.S. as having "active" and "non-active" earthquake zones, earthquakes can actually happen almost anywhere. Seismologists typically separate the U.S. into low, moderate, and high seismicity zones. The NRC requires that every plant be designed for site-specific ground motions that are appropriate for their locations. In addition, the NRC has specified a minimum ground shaking level to which plants must be designed.

Seismic designs at U.S. nuclear power plants are developed in terms of seismic ground motion spectra, which are called the Safe Shutdown Earthquake ground motion response spectra (SSE). Each nuclear power plant is designed to a ground motion level that is appropriate for the geology and tectonics in the region surrounding the plant location. Currently operating nuclear power plants developed their SSEs based on a "deterministic" or "scenario earthquake" that accounts for the largest earthquake expected in the area around the plant.

Generally speaking, seismic activity in the regions surrounding U.S. plants is much lower than that for Japan since most U.S. plants are located in the interior of the stable continental U.S. However, the most widely felt earthquakes within the continental U.S. are the 1811-12 New Madrid sequence and the 1886 Charleston, SC, which were estimated to be between about magnitude 7.0 to 7.75. Nuclear power plants in the U.S. are sited far away from these two earthquake zones as well as other identified potential seismic sources.

On the west coast of the U.S., the two nuclear power plants are designed to specific ground motions from earthquakes of about magnitude 7+ on faults located just offshore of the plants. The earthquakes on these faults are mainly strike-slip (horizontal motion) type earthquakes, not subduction zone earthquakes. Therefore, the likelihood of a tsunami from these faults is remote.

Additional, technical non-public information: None.

6) How many reactors are along coastal areas that could be affected by a tsunami (and which ones)?

Public Answer: Many plants are located in coastal areas that could potentially be affected by tsunami. Two plants, Diablo Canyon and San Onofre, are on the Pacific Coast, which is known to have tsunami hazard. There are also two plants on the Gulf Coast, South Texas and Crystal River. There are many plants on the Atlantic Coast or on rivers that may be affected by a tidal bore resulting from a tsunami. These include St. Lucie, Turkey Point, Brunswick, Oyster Creek, Millstone, Pilgrim, Seabrook, Calvert Cliffs, Salem/Hope Creek, and Surry. Tsunami on the Gulf and Atlantic Coasts occur, but are very rare. Generally the flooding anticipated from hurricane storm surge exceeds the flooding expected from a tsunami for plants on the Atlantic and Gulf Coast.

Additional, technical non-public information: A table with information on tsunami design levels is provided in the "Additional Information" section of this document.

7) If the earthquake in Japan was a larger magnitude than considered by plant design, why can't the same thing happen in the US?

Public response: *Discuss in terms of, IPEEE, Seismic PRA to be provided by Nilesh*

Additional, technical, non-public information: ADD

8) What if an earthquake like the Sendai earthquake occurred near a US plant?

Public response: *ADD*

Additional, technical, non-public information: ADD

9) What would be the results of a tsunami generated off the coast of a US plant? (Or why are we confident that large tsunamis will not occur relatively close to US shores?)

Public response: *Request for answer by Henry Jones, Goutam Bagchi and/or Richard Raione (once the tsunami fact sheet is done and you have time).*

Additional, technical, non-public information: ADD

10) Can this happen here i.e. an earthquake that significantly damages a nuclear power plant? Are the Japanese plants similar to U.S. plants?

Public Answer: All U.S. nuclear power plants are built to withstand environmental hazards, including earthquakes and tsunamis. Even those plants that are located within areas with low and moderate seismic activity are designed for safety in the event of such a natural disaster. The NRC requires that safety-significant structures, systems, and components be designed to take into account even rare and extreme seismic and tsunami events.

The Japanese facilities are similar in design to several US facilities.

Additional technical, non-public information: Currently operating reactors were designed using a "deterministic" or "maximum credible earthquake" approach. Seismic hazard for the new plants is determined using a probabilistic seismic hazard assessment approach that explicitly addresses uncertainty, as described in Regulatory Guide 1.208. The NRC requires that adequate margin beyond the design basis ground shaking levels is assured. The NRC further enhances seismic safety for beyond-design-basis events through the use of a defense-in-depth approach.

In addition, the NRC reviews the seismic risk at operating reactors as needed when information may have changed. Over the last few years the NRC has undertaken a program called Generic Issue 199, which is focused on assessing hazard for plants in the central and eastern US using the latest techniques and data and determining the possible risk implications of any increase in the anticipated ground shaking levels. This program will help us assure that the plants are safe under exceptionally rare and extreme ground motions that represent beyond-design-basis events.

11) What level of earthquake hazard are the US reactors designed for?

Public Answer: Each reactor is designed for a different ground motion that is determined on a site-specific basis. The existing plants were designed on a "deterministic" or "scenario earthquake" basis that accounted for the largest earthquake expected in the area around the plant. New reactors are designed using probabilistic techniques that characterize the hazard (i.e. ground shaking levels) and uncertainty at the proposed site. Ground motions from all potential seismic sources in the region are estimated and used to develop an appropriate site specific ground motion, which has a return period of 10,000 years on average over very long time periods.

Additional technical, non-public information: None

12) Does the NRC consider earthquakes of magnitude 9?

Public Answer: Earthquakes with very large magnitudes, such as the recent earthquake of the coast of Japan, occur only within subduction zones. Subduction zones are regions where one of the earth's

tectonic plates is subducting beneath another. In the continental US, the only subduction zone is the Cascadia subduction zone, which lies off of the coast of northern California, Oregon, and Washington. The only nuclear power plant in that area is Columbia, which is far from the coast and the subduction zone.

Seismic designs at U.S. nuclear power plants are developed in terms of seismic ground motion spectra, which are called the Safe Shutdown Earthquake ground motion response spectra (SSE). Each nuclear power plant is designed to a ground motion level that is appropriate for the geology and tectonics in the region surrounding the plant location. Currently operating nuclear power plants developed their SSEs based on a "deterministic" or "scenario earthquake" basis that account for the largest earthquake expected in the area around the plant. Seismic activity in the regions surrounding U.S. plants is much lower than that for Japan since most U.S. plants are located in the interior of the stable continental U.S. The largest earthquakes within the continental U.S. are the 1811-12 New Madrid sequence and the 1886 Charleston, SC, which were estimated to be between about magnitude 7 to 7.5. On the west coast of the U.S., the two nuclear power plants are designed to specific ground motions from earthquakes of about magnitude 7 on faults located just offshore of the plants. The earthquakes on these faults are mainly strike-slip (horizontal motion) type earthquakes, not subduction zone earthquakes. Therefore, the likelihood of a tsunami from these faults is very remote.

Additional technical, non-public information: None.

13) What are the definitions of the SSE and OBE?

CLEAN UP BELOW information – late question

From RG1.208 Safe Shutdown Earthquake Ground Motion (SSE). The vibratory ground motion for which certain structures, systems, and components are designed, pursuant to Appendix S to 10 CFR Part 50, to remain functional. The SSE for the site is characterized by both horizontal and vertical free-field ground motion response spectra at the free ground surface

Appendix S to 10 CFR Part 50 (3) has the following information: Required Plant Shutdown. If vibratory ground motion exceeding that of the Operating Basis Earthquake Ground Motion or if significant plant damage occurs, the licensee must shut down the nuclear power plant. If systems, structures, or components necessary for the safe shutdown of the nuclear power plant are not available after the occurrence of the Operating Basis Earthquake Ground Motion, the licensee must consult with the Commission and must propose a plan for the timely, safe shutdown of the nuclear power plant. Prior to resuming operations, the licensee must demonstrate to the Commission that no functional damage has occurred to those features necessary for continued operation without undue risk to the health and safety of the public and the licensing basis is maintained.

The the ratio is provided in guidance as the ratio that the licensees can chose without additional analysis. The OBE mostly used to be half for existing plants, but now it's a 1/3 unless you do analyses to show why it should be ½.

Definition of Safe Shutdown Earthquake	The safe-shutdown earthquake (SSE) for the site is the ground motion response spectra (GMRS), which also satisfies the minimum requirement of paragraph IV(a)(1)(i) of Appendix S, "Earthquake Engineering Criteria for Nuclear Power Plants," to Title 10, Part 50, "Domestic Licensing of Production and Utilization Facilities," of the Code of Federal Regulations (10 CFR Part 50).
Definition of Operating Basis Earthquake:	To satisfy the requirements of paragraph IV(a)(2)(A) of Appendix S to 10 CFR Part 50, the operating-basis earthquake (OBE) ground motion is defined as follows: (i) For the certified design portion of the plant, the OBE ground motion is one-third

		of the CSDRS.
	(ii)	For the safety-related noncertified design portion of the plant, the OBE ground motion is one-third of the design motion response spectra, as stipulated in the design certification conditions specified in design control document (DCD).
	(iii)	The spectrum ordinate criterion to be used in conjunction with Regulatory Guide 1.166, "Pre-Earthquake Planning and Immediate Nuclear Power Plant Operator Post-earthquake Actions," issued March 1997, is the lowest of (i) and (ii).

14) What is the likelihood of the design basis or "SSE" ground motions being exceeded over the life of the plant?

To estimate the probability of exceeding a specified ground motion level, such as an SSE, during a given time interval, the Poisson model is generally used. Using seismic hazard curves from the 2008 US Geological Survey National Seismic Hazard Map and assuming a 60-year life for a typical nuclear power plant, we can estimate the probability of exceeding the SSE over the life of the plant. The NRC recently performed these estimates as part of its GI-199 program (see Questions 54-59). The mean probability value for the plants in the Central and Eastern United States is less than 2%, with values ranging from a low of 0.1% to a high of 6%.

It is important to remember that there is margin above the design basis. In the mid to late 1990s, the NRC staff reviewed the potential for ground motions beyond the design basis as part of the Individual Plant Examination of External Events (IPEEE). From this review, the staff determined that seismic designs of operating plants in the United States have adequate safety margins for withstanding earthquakes built into the designs.

15) What is magnitude anyway? What is the Richter Scale? What is intensity?

ADD

16) We need to pull Q&As out of the Markey/Capp letter of March 15th...there's a lot there to answer...

ADD

17) How do magnitude and ground motion relate to each other?

ADD

18) How are combined seismic and tsunami events treated in risk space? Are they considered together?

the PRA Standard (ASME/ANS-Ra-Sa2009) does address the technical requirements for both seismic events and tsunamis (tsunami hazard under the technical requirements for external flooding analysis). But together? The standard does note that uncertainties associated with probabilistic analysis of tsunami hazard frequency are large and that an engineering analysis can usually be used to screen out tsunamis.

19) How are aftershocks treated in terms of risk assessment?

Seismic PRAs do not consider the affect of aftershocks since there are not methods to predict equipment fragility after the first main shock.

Design Against Natural Hazards & Plant Safety in the US

21) Are power plants designed for Tsunami's?

Public Answer: Yes. Plants are built to withstand a variety of environmental hazards and those plants that might face a threat from tsunami are required to withstand large waves and the maximum wave height at the intake structure (which varies by plant.)

Additional, technical, non-public information: Tsunami are considered in the design of US nuclear plants. Nuclear plants are designed to withstand flooding from not only tsunami, but also hurricane and storm surge; therefore there is often significant margin against tsunami flooding. However, it should be noted that Japanese experience has shown that drawdown can be a significant problem.

Currently the US NRC has a tsunami research program that is focused on developing modern hazard assessment techniques and additional guidance through cooperation with the National Oceanic and Atmospheric Administration and the United States Geological Survey. This has already lead to several technical reports and an update to NUREG 0-800. The NOAA and USGS contractors are also assisting with NRO reviews of tsunami hazard. A new regulatory guide on tsunami hazard assessment is currently planned in the office of research, although it is not expected to be available in draft form until 2012.

22) What level of Tsunami are we designed for?

Public Answer: Like seismic hazard, the level of tsunami that each plant is designed for is site-specific and is appropriate for what may occur at each location.

Additional, technical, non-public information: None.

23) Which plants are close to known active faults? What are the faults and how far away are they from the plants?

Public Answer: Jon to develop answer with Dogan's help. I created a placeholder table for your use "Table of Plants Near Known Active Faults" to be populated in the additional information section. The plots that Dogan made are in the additional information section under "Plot of Mapped Active Quaternary Faults and Nuclear Plants in the US". This is really high priority after the congressional hearings.

Additional, technical, non-public information: ADD

24) How was the seismic design basis for an existing nuclear power plant established?

Public Answer: The seismic ground motion used for the design basis was determined from the evaluation of the maximum historic earthquake within 200 miles of the site, without explicitly considering the time spans between such earthquakes; safety margin was then added beyond this maximum historic earthquake to form a hypothetical *design basis earthquake*. The relevant regulation for currently operating plants is 10 CFR Part 100, Appendix A, "Seismic and Geologic Siting Criteria for Nuclear Power Plants" (http://www.nrc.gov/reading-rm/doc-collections/cfr/part100/part100-appa.html).

Additional, technical, non-public information: See discussion at end of GI-199 section for discussion of safety margin and design basis.

25) Is there margin above the design basis?

Public Answer: Yes, there is margin beyond the design basis). In the mid to late 1990s, NRC staff reviewed the plants' assessments of potential consequences of severe earthquakes (earthquakes beyond the safety margin included in each plant's design basis), which licensees performed as part of the Individual Plant Examination of External Events (or IPEEE) program. From this review, the staff determined that seismic designs of operating plants in the United States have adequate safety margins, for withstanding earthquakes, built into the designs.

Additional, technical, non-public information: None.

26) Are US plants safe?

Public Answer: US plants are designed for appropriate earthquake shaking levels and are safe. Currently the NRC is also conducting a program called Generic Issue 199, which is reviewing the adequacy of earthquake design of US NPPs in the central and eastern North America based on the latest data and analysis techniques.

Additional, technical, non-public information: None.

27) Was the Japanese plant designed for this type of accident? Are US plants?

Public Answer: Plants in both the US and Japan area designed for earthquake shaking. In addition to the design of the plants, significant effort goes into emergency response planning and accident mitigation. This approach is called defense-in-depth.

Additional, technical, non-public information: None.

28) Why do we have confidence that US nuclear power plants are adequately designed for earthquakes and tsunamis?

Public Answer: Plants in both the US and Japan area designed for earthquake shaking. In addition to the design of the plants, significant effort goes into emergency response planning and accident mitigation. This approach is called defense-in-depth.

Additional, technical, non-public information: None.

29) Can this happen here i.e. an earthquake that significantly damages a nuclear power plant? Are the Japanese plants similar to U.S. plants?

Public Answer: All U.S. nuclear power plants are built to withstand environmental hazards, including earthquakes and tsunamis. Even those plants that are located within areas with low and moderate seismic activity are designed for safety in the event of such a natural disaster. The NRC requires that safety-significant structures, systems, and components be designed to take into account even rare and extreme seismic and tsunami events Nuclear power plants are designed to be safe based on the most severe natural phenomena historically reported for the site and surrounding area. The Japanese facilities are similar in design to several US facilities.

Additional technical, non-public information: Currently operating reactors were designed using a "deterministic" or "maximum credible earthquake" approach. Seismic hazard for the new plants is determined using a probabilistic seismic hazard assessment approach that explicitly addresses uncertainty, as described in Regulatory Guide 1.208. The NRC requires that adequate margin beyond the design basis ground shaking levels is assured. The NRC further enhances seismic safety for beyond-design-basis events through the use of a defense-in-depth approach.

In addition, the NRC reviews the seismic risk at operating reactors as needed when information may have changed. Over the last few years the NRC has undertaken a program called Generic Issue 199, which is focused on assessing hazard for plants in the central and eastern US using the latest techniques and data and is determining the possible risk implications of any increase in the anticipated ground shaking levels. This program will help us assure that the plants are safe under exceptionally rare and extreme ground motions that represent beyond-design-basis events.

The reactor design is a Boiling Water Reactor that is similar to some U.S. designs, including Oyster Creek, Nine Mile Point and Dresden Units 2 and 3.

30) Could an accident like the one at Japan's Fukushima Daiichi nuclear plant happen in the United States?

Public response: It is difficult to answer this question until we have a better understanding of the precise problems and conditions that faced the operators at Fukushima Daiichi. We do know, however, that Fukushima Daiichi Units 1-3 lost all offsite power and emergency diesel generators. This situation is called "station blackout." U.S. nuclear power plants are designed to cope with a station blackout event that involves a loss of offsite power and onsite emergency power. The Nuclear Regulatory Commission's detailed regulations address this scenario. U.S. nuclear plants are required to conduct a "coping" assessment and develop a strategy to demonstrate to the NRC that they could maintain the plant in a safe condition during a station blackout scenario. These assessments, proposed modifications and operating procedures were reviewed and approved by the NRC. Several plants added additional AC power sources to comply with this regulation.

In addition, U.S. nuclear plant designs and operating practices since the terrorist events of September 11, 2001, are designed to mitigate severe accident scenarios such as aircraft impact, which include the complete loss of offsite power and all on-site emergency power sources.

U.S. nuclear plant designs include consideration of seismic events and tsunamis'. It is important not to extrapolate earthquake and tsunami data from one location of the world to another when evaluating these natural hazards. These catastrophic natural events are very region- and location-specific, based on tectonic and geological fault line locations.

Additional technical, non-public information: None

31) Should U.S. nuclear facilities be required to withstand earthquakes and tsunamis of the kind just experienced in Japan? If not, why not?

Public response: U.S. nuclear reactors are designed to withstand an earthquake equal to the most significant historical event or the maximum projected seismic event and associated tsunami without any breach of safety systems.

The lessons learned from this experience must be reviewed carefully to see whether they apply to U.S. nuclear power plants. It is important not to extrapolate earthquake and tsunami data from one location of the world to another when evaluating these natural hazards, however. These catastrophic natural events are very region- and location-specific, based on tectonic and geological fault line locations.

The U.S. Geological Survey (USGS) conducts continuous research of earthquake history and geology, and publishes updated seismic hazard curves for various regions in the continental US. These curves are updated approximately every six years. NRC identified a generic issue (GI-199) that is currently undergoing an evaluation to assess implications of this new information to nuclear plant sites located in the central and eastern United States. The industry is working with the NRC to address this issue.

Additional technical, non-public information: None

32) **Can you summarize the plant seismic design basis for the US plants? Are there any special issues associated with seismic design?**

Public response: Please see one of the several tables provided in the "Additional information" section of this document

Additional, technical, non-public information: None

33) **How do we know that the equipment in plants is safe in earthquakes?**

Public response: All equipment important to safety (required to safely shutdown a nuclear power plant) is qualified to withstand earthquakes in accordance with plants' licensing basis and NRC regulations.

Additional, technical, non-public information: 10 CFR 50, Appendix A, General Design Criterion 2 and 4, 10 Part 100, and Appendix S. Guidance: Regulatory Guides 1.100, IEEE 344 and ASME QME-1

34) **How do we know equipment will work if the magnitude is bigger than expected, like in Japan?**

Public response: Plant systems are designed to mitigate a design basis earthquake which includes margin above the postulated site specific earthquake. (reviewers comment: this needs to be expanded)

Additional, technical, non-public information: See part 100 Reactor Site Criteria

35) **Are US plants susceptible to the same kind of loss of power as happened in Japan?**

Public response: NRC recognized that there is the possibility of a total loss of AC power at a site, called a 'Station Blackout', or SBO. Existing Regulations require the sites to be prepared for the possibility of an SBO. In addition to battery powered back-up system to immediately provide power for emergency systems, NRC regulations require the sites to have a detailed plan of action to address the loss of AC power while maintaining control of the reactor.

There has also been an understanding that sites can lose offsite power as well. Of course, this can be caused by earthquake. However, hurricane- or tornado-related high winds may potentially damage the transmission network in the vicinity of a nuclear plant as well. Flood waters can also affect transformers used to power station auxiliary system. These types of weather related events have the potential to degrade the offsite power source to a plant.

The onsite Emergency Diesel Generators need fuel oil stored in tanks that are normally buried underground. These tanks and associated pumps/piping require protection from the elements. Above ground tanks have tornado/missile protection.

In case both offsite and onsite power supplies fail, NRC has required all licensee to evaluate for a loss of all AC power (station blackout) scenario and implement coping measures to safely shutdown the plant law 10 CFR 50.63.

Additional, technical, non-public information: Some plants have safeguards equipment below sea level and rely on watertight doors or Bilge pumps to remove water from equipment required to support safe shutdown. Overflowing rivers can result in insurmountable volume of water flooding the vulnerable areas. SBO definition in 10CFR50.2, SBO plan requirements in 10CFR50.63

36) **How do we know that the EDGs in Diablo Canyon and SONGS will not fail to operate like in Japan?**

Public response: EDGs are installed in a seismically qualified structure. Even if these EDGs fail, plants can safely shutdown using station blackout power source law 10 CFR 50.63.

Additional, technical, non-public information: None.

37) **Is all equipment at the plant vulnerable to tsunami?**

Public response: Plants are designed law GDC 2 to withstand protection against natural phenomena such as tsunami, earthquakes. (reviewers comment: this needs to be expanded. I need assistance with this)

Additional, technical, non-public information: ADD

38) **What protection measures do plants have against tsunami?**

Public response: Plants are designed iaw GDC 2 to withstand protection against natural phenomena such as tsunami, earthquakes. (note from reviewer: add information on breakwater from songs and Diablo example. I need assistance with this)

Additional, technical, non-public information: ADD

39) **Is there a risk of loss of water during tsunami drawdown? Is it considered in design?**

Public response: *Goutam, Henry and Rich, can you guys answer this?*

Additional, technical, non-public information: ADD

40) **Are nuclear buildings built to withstand earthquakes? What about tsunami?**

Public response: *There is language elsewhere in this document that answers that...copy here.*

Additional, technical, non-public information: ADD

41) **Are aftershocks considered in the design of equipment at the plants? Are aftershocks considered in design of the structure?**

Public response: ADD

Additional, technical, non-public information: ADD

42) **Are there any special issues associated with seismic design at the plants? For example, Diablo Canyon has special requirements. Are there any others?**

Public response: Both SONGS and Diablo canyon are licensed with an automatic trip for seismic events. *(can this be expanded? any others?) Mike Markley, can your group assist with this?*

Additional, technical, non-public information: ADD

43) **Is the NRC planning to require seismic isolators for the next generation of nuclear power plants? How does that differ from current requirements and/or precautions at existing U.S. nuclear power plants?**

Public response: The NRC would not require isolators for the next generation of plants. However, it is recognized that a properly designed isolation system can be very effective in mitigating the effect of

earthquake. Currently the NRC is preparing guidance for plant designers considering the use of seismic isolation devices.

Additional, technical, non-public information: A NUREG is in the works in the office of research. It is expected to be available for comment in 2011.

44) **Are there any U.S. nuclear power plants that incorporate seismic isolators? What precautions are taken in earthquake-prone areas?**

Public response: No currently constructed nuclear power plants in the US use seismic isolators. However seismic isolation is being considered for a number of reactor designs under development. Currently seismic design of plants is focused on assuring that design of structures, systems, and components are designed and qualified to assure that there is sufficient margin beyond the design basis ground motion.

Additional, technical, non-public information: None.

45) **Do you think that the recent Japan disaster will cause any rethinking of the planned seismic isolation guidelines, particularly as it regards earthquakes and secondary effects such as tsunamis?**

Public response: Whenever an event like this happens, the NRC thoroughly reviews the experience and tries to identify any lessons learned. The NRC further considers the need to change guidance or regulations. In this case, the event will be studied and any necessary changes will be made to the guidance under development. However, it should be noted that Japan does not have seismically isolated nuclear plants.

Additional, technical, non-public information: None.

About Japanese Hazard, Design and Earthquake Impact

46) Was the damage done to the plants from the Earthquake or the Tsunami?

Public response: It is hard to tell at this point. In the nuclear plants there seems to have been some damage from the shaking. However, the tsunami lead to some of the biggest problems in terms of the loss of backup power. This is also true in the general population; the tsunami seems to have lead to most of the deaths.

Additional, technical, non-public information: None

47) What is the design level of the Japanese plants? Was it exceeded?

Public response: As a result of a significant change in seismic regulations in 2006, the Japanese regulator initiated a program to reassess seismic hazard and seismic risk for all nuclear plants in Japan. This resulted in new assessments of higher ground shaking levels (i.e. seismic hazard) and a review of seismic safety for all Japanese plants. The program is still on-going, but has already resulted in retrofit in some plants. Therefore, it is useful to discuss both the design level and a review level ground motion for the plants, as shown below.

Currently we do not have official information. However, it appears that the ground motions (in terms of peak ground acceleration) are similar to the S_s shaking levels, although the causative earthquakes are different. Thus the design basis was exceeded, but the review level may not have been.

Table: Original Design Basis Ground Motions (S_2) and New Review Level Ground Motions (S_s) Used for Review of Japanese Plants

Plant sites	Contributing earthquakes used for determination of hazard	New DBGM S_s	Original DBGM S_1
Onagawa	Soutei Miyagiken-oki (M8.2)	580 gal (0.59g)	375 gal (0.38g)
Fukushima	Earthquake near the site (M7.1)	600 gal (0.62g)	370 gal (0.37g)
Tokai	Earthquakes specifically undefined	600 gal (0.62g)	380 gal (0.39g)
Hamaoka	Assumed Tokai (M8.0), etc.	800 gal (0.82g)	600 gal (0.62g)

Additional, technical, non-public information: None

48) What are the Japanese S_1 and S_s ground motions and how are they determined?

Public response: Japanese nuclear power plants are designed to withstand specified earthquake ground motions, previously specified as S_1 and S_2, but now simply S_S. The design basis earthquake ground motion S_1 was defined as the largest earthquake that can reasonably be expected to occur at the site of a nuclear power plant, based on the known seismicity of the area and local faults that have shown activity during the past 10,000 years. A power reactor could continue to operate safely during an S_1 level earthquake, though in practice they are set to trip at lower levels. The S_2 level ground motion was based on a larger earthquake from faults that have shown activity during the past 50,000 years and assumed to be closer to the site. The revised seismic regulations in May 2007 replaced S_1 and S_2 with S_S.

The S_S design basis earthquake is based on evaluating potential earthquakes from faults that have shown activity during the past 130,000 years. The ground motion from these potential earthquakes are simulated for each of the sites and used to determine the revised S_S design basis ground motion level. Along with the change in definition, came a requirement to consider "residual risk", which is a consideration of the beyond-design-basis event.

Additional, technical, non-public information: None

49) Did this earthquake affect Kashiwazaki-Kariwa NPP?

Public response: No, this earthquake did not affect Kashiwazaki-Kariwa NPP and all reactors remained in their pre-earthquake operating state. It also did not trip during an earthquake of magnitude XX that occurred on the western side subsequent to the 8.9 earthquake. This is very important for the stability of Japan's energy supply due to the loss of production at TEPCO's Fukushima NPPs.

Additional, technical, non-public information: None

50) How high were the tsunami at the plants?

Public response: The actual tsunami height at the plants is not currently known. However, NOAA has publically information on the recordings at sea for many areas.

Additional, technical, non-public information: A preliminary rough estimate of tsunami height at the plant locations was provided to NRC by NOAA shortly after the earthquake. This was developed using NOAA's global ocean model and is shown in the "additional information" section. Most notably, there was a 6 meter wave at Fukushima and the wave at Onogawa may have been between 18 and 23 meters.

51) Wikileaks has a story that quotes US embassy correspondence and some un-named IAEA expert stating that the Japanese were warned about this ... Does the NRC want to comment?

http://www.dailymail.co.uk/news/article-1366721/Japan-tsunami-Government-warned-nuclear-plants-withstand-earthquake.html

Public response: TBD Annie to explain the history of their recent retrofit program.

Additional, technical, non-public information: The article talks about that the plants and that were checked for a M=7, but the earthquake was a 9. The reality is the 7 close in (that they assumed) had similar ground motions to a 9 farther away. They did check (and retrofit) the plant to the ground motions that they probably saw (or nearly). The problem was the tsunami. We probably need a small write up so that staff understands, even if we keep it internal.

What happened in US Plants during the earthquake?

52) Was there any damage to U.S. reactors from either the earthquake or the resulting tsunami?

Public Answer: No

Additional, technical non-public information: Two US plants on the Pacific Ocean (Diablo Canyon and San Onofre) experienced higher than normal sea level due to tsunami. However, the wave heights were consistent with previously predicted levels and this had no negative impact to the plants. In response, Diablo Canyon Units 1 and 2 declared an "unusual event" based on tsunami warning following the Japanese earthquake. They have since exited the "unusual event" declaration, based on a downgrade to a tsunami advisory.

53) Have any lessons for US plants been identified?

Public Answer: The NRC is in the process of following and reviewing the event in real time. This, inevitably, leads to the indemnification of lessons that warrant further study. However, a complete understanding of lessons learned requires more information than is currently available to NRC staff.

Additional, technical non-public information: We need to take a closer look at common cause failures, such as earthquake and tsunami, and earthquake and dam failure.

Future Actions, Reassessment of US Plants and GI-199

54) What is the NRC doing about the emergencies at the nuclear power plants in Japan? Are you sending staff over there?

Public Answer: We are closely following events in Japan, working with other agencies of the federal government, and have been in direct contact with our counterparts in that country. In addition, we are ready to provide assistance if there is a specific request. An NRC staffer is participating in the USAID team headed to Japan.

Additional technical, non-public information: We are taking the knowledge that the staff has about the design of the US nuclear plants and we are applying this knowledge to the Japan situation. For example, this includes calculations of severe accident mitigation that have been performed.

55) With NRC moving to design certification, at what point is seismic capability tested - during design or modified to be site-specific? If in design, what strength seismic event must these be built to withstand?

Public Answer: During design certification, vendors propose a seismic design in terms of a ground motion spectrum for their nuclear facility. This spectrum is called a standard design response spectrum and is developed so that the proposed nuclear facility can be sited at most locations in the central and eastern United States. The vendors show that this design ground motion is suitable for a variety of different subsurface conditions such as hard rock, deep soil, or shallow soil over rock. Combined License and Early Site Permits applicants are required to develop a site specific ground motion response spectrum that takes into account all of the earthquakes in the region surrounding their site as well as the local site geologic conditions. Applicants estimate the ground motion from these postulated earthquakes to develop seismic hazard curves. These seismic hazard curves are then used to determine a site specific ground motion response spectrum that has a maximum annual likelihood of $1x10^{-4}$ of being exceeded. This can be thought of as a ground motion with a 10,000 year return period. This site specific ground motion response spectrum is then compared to the standard design response spectrum for the proposed design. If the standard design ground motion spectrum envelopes the site specific ground motion spectrum then the site is considered to be suitable for the proposed design. If the standard design spectrum does not completely envelope the site specific ground motion spectrum, then the COL applicant must do further detailed structural analysis to show that the design capacity is adequate. Margin beyond the standard design and site specific ground motions must also be demonstrated before fuel loading can begin.

Additional technical, non-public information: None.

56) Can we get the rankings of the plants in terms of safety? (Actually this answer should be considered any time GI-199 data is used to "rank" plants)

he objective of the GI-199 Safety/Risk Assessment was to perform a conservative, screening-level assessment to evaluate if further investigations of seismic safety for operating reactors in the central and eastern U.S. (CEUS) are warranted consistent with NRC directives. The results of the GI-199 SRA should not be interpreted as definitive estimates of plant-specific seismic risk. The nature of the information used (both seismic hazard data and plant-level fragility information) make these estimates useful only as a screening tool. The NRC does not rank plants by seismic risk.

Currently operating nuclear plants in the United States remain safe, with no need for immediate action. This determination is based on NRC staff reviews of updated seismic hazard information and the conclusions of the Generic Issue 199 Screening Panel. Existing plants were designed with considerable margin to be able to withstand the ground motions from the "deterministic" or "scenario earthquake" that accounted for the largest earthquake expected in the area around the plant. During the mid-to late-1990s, the NRC staff reassessed the margin beyond the design basis as part of the Individual Plant Examination of External Events (IPEEE) program. The results of the GI-199 assessment demonstrate that the probability of exceeding the design basis ground motion may have increased at some sites, but only by a relatively small amount. In addition, the Safety/Risk Assessment stage results indicate that the probabilities of seismic core damage are lower than the guidelines for taking immediate action.

57) Is the earthquake safety of US plants reviewed once the plants are constructed?

Public response: Yes, earthquake safety is reviewed during focused design inspections, under the Generic Issues Program (GI-199) and as part of the Individual Plant Evaluation of External Events program (IPEEE) that was conducted in response to Generic Letter 88-20 Supplement 4.

Additional, technical, non-public information: None.

58) Does the NRC ever review tsunami risk for existing plants?

Public Answer: The NRC has not conducted a generic issue program on tsunami risk to date. However, some plants have been reviewed as a result of the application for a license for a new reactor. In the ASME/ANS 2009 seismic probabilistic risk assessment standard, all external hazards are included.

Additional, technical, non-public information: None.

59) Does GI-199 consider tsunami?

Public response: GI-199 stems from the increased in perceived seismic hazard focused on understanding the impact of increased ground motion on the risk at a plant. GI-199 does not consider tsunami

Additional, technical, non-public information: In the past there has been discussion about a GI program on tsunami, but the NRC's research and guidance was not yet at the point it would be effective. We are just getting to this stage and the topic should be revisited.

60) What is Generic Issue 199 about?

Public Answer: Generic Issue 199 investigates the safety and risk implications of updated earthquake-related data and models. These data and models suggest that the probability for earthquake ground shaking above the seismic design basis for some nuclear power plants in the Central and Eastern United States is still low, but larger than previous estimates.

Additional, technical, non-public information: See additional summary/discussion of GI-199 and terms below.

61) Where can I get current information about Generic Issue 199?

Public Answer: The public NRC Generic Issues Program (GIP) website (http://www.nrc.gov/about-nrc/regulatory/gen-issues.html) contains program information and documents, background and historical information, generic issue status information, and links to related programs. The latest Generic Issue Management Control System quarterly report, which has regularly updated GI-199 information, is publicly available at http://www.nrc.gov/reading-rm/doc-collections/generic-

issues/quarterly/index.html. Additionally, the U.S. Geological Survey provides data and results that are publicly available at http://earthquake.usgs.gov/hazards/products/conterminous/2008/.

Additional, technical, non-public information: The GI-199 section of the NRC internal GIP website (http://www.internal.nrc.gov/RES/projects/GIP/Individual%20GIs/GI-0199.html) contains additional information about Generic Issue 199 (GI-199) and is available to NRC staff.

62) How was the seismic design basis for an existing nuclear power plant established?

Public Answer: The seismic ground motion used for the design basis was determined from the evaluation of the maximum historic earthquake within 200 miles of the site, without explicitly considering the time spans between such earthquakes; safety margin was then added beyond this maximum historic earthquake to form a hypothetical *design basis earthquake*. The relevant regulation for currently operating plants is 10 CFR Part 100, Appendix A, "Seismic and Geologic Siting Criteria for Nuclear Power Plants" (http://www.nrc.gov/reading-rm/doc-collections/cfr/part100/part100-appa.html).

Additional, technical, non-public information: See discussion at end of GI-199 section for discussion of safety margin and design basis.

63) Is there margin above the design basis?

Public Answer: Yes, there is margin beyond the design basis. In the mid to late 1990s, NRC staff reviewed the plants' assessments of potential ground motion beyond the safety margin included in each plant's design basis, which licensees performed as part of the Individual Plant Examination of External Events (or IPEEE) program. From this review, the staff determined that seismic designs of operating plants in the United States have adequate safety margins, for withstanding earthquakes, built into the designs.

Additional, technical, non-public information: The goal of seismic engineering is to design structures, systems and components that explicitly do not fail at the design level. The application of specific codes, standards, and analysis techniques results in margin beyond the design level. The assessments carried out as part of the IPEEE program demonstrated that margin exists in the operating reactors against seismic demand.

64) Are all U.S. plants being evaluated as a part of Generic Issue 199?

Public Answer: The scope of the Generic Issue 199 (GI-199) Safety/Risk Assessment is limited to all plants in the Central and Eastern United States. Although plants at the Columbia, Diablo Canyon, Palo Verde, and San Onofre sites are not included in the GI-199 Safety/Risk Assessment, the Information Notice on GI-199 is addressed to all operating power plants in the U.S. (as well as all independent spent fuel storage installation licensees). The staff will also consider inclusion of operating reactors in the Western U.S. in its future generic communication information requests.

Additional, technical, non-public information: The staff is currently developing specific information needs to be included in a Generic Letter to licensees in the CEUS.

65) Are the plants safe? If you are not sure they are safe, why are they not being shut down? If you are sure they are safe, why are you continuing evaluations related to this generic issue?

Public Answer: Yes, currently operating nuclear plants in the United States remain safe, with no need for immediate action. This determination is based on NRC staff reviews associated with Early Site

Permits and updated seismic hazard information, the conclusions of the Generic Issue 199 Screening Panel (comprised of technical experts), and the conclusions of the Safety/Risk Assessment Panel (also comprised of technical experts).

No immediate action is needed because: (1) existing plants were designed to withstand anticipated earthquakes with substantial design margins, as confirmed by the results of the Individual Plant Examination of External Events program; (2) the probability of exceeding the *safe shutdown earthquake* ground motion may have increased at some sites, but only by a relatively small amount; and (3) the Safety/Risk Assessment Stage results indicate that the probabilities of seismic core damage are lower than the guidelines for taking immediate action.

Even though the staff has determined that existing plants remain safe, the Generic Issues Program criteria (Management Directive 6.4) direct staff to continue their analysis to determine whether any cost-justified plant improvements can be identified to make plants enhance plant safety.

Additional, technical, non-public information : The Safety/Risk Assessment results confirm that plants are safe. The relevant risk criterion for GI-199 is total *core damage frequency* (CDF). The threshold for taking immediate regulatory action (found in NRR Office Instruction LIC-504, see below) is a total CDF greater than or on the order of 10^{-3} (0.001) per year. For GI-199, the staff calculated seismic CDFs of 10^{-4} (0.0001) per year and below for nuclear power plants operating in the Central and Eastern U.S. (CEUS) (based on the new U.S. Geological Survey seismic hazard curves). The CDF from internal events (estimated using the staff-developed Standardized Plant Analysis of Risk models) and fires (as reported by licensees during the IPEEE process and documented in NUREG-1742), when added to the seismic CDF estimates results in the total risk for each plant to be, at most, 4×10^{-4} (0.0004) per year or below. This is well below the threshold (a CDF of 10^{-3} [0.001] per year) for taking immediate action. Based on the determination that there is no need for immediate action, and that this issue has not changed the licensing basis for any operating plant, the CEUS operating nuclear power plants are considered safe. In addition, as detailed in the GI-199 Safety/Risk Assessment there are additional, qualitative considerations that provide further support to the conclusion that plants are safe.

Note: The NRC has an integrated, risk-informed decision-making process for emergent reactor issues (NRR Office Instruction LIC-504, ADAMS Accession No. ML100541776 [not publically available]). In addition to deterministic criteria, LIC-504 contains risk criteria for determining when an emergent issue requires regulatory action to place or maintain a plant in a safe condition.

66) What do you mean by "increased estimates of seismic hazards" at nuclear power plant sites?

Public Answer: *Seismic hazard* (earthquake hazard) represents the chance (or probability) that a specific level of ground shaking could be observed or exceeded at a given location. Our estimates of seismic hazard at some Central and Eastern United States locations have changed based on results from recent research, indicating that earthquakes occurred more often in some locations than previously estimated. Our estimates of seismic hazard have also changed because the models used to predict the level of ground shaking, as caused by a specific magnitude earthquake at a certain distance from a site, changed. The increased estimates of seismic hazard at some locations in the Central and Eastern United States were discussed in a memorandum to the Commission, dated July 26, 2006. (The memorandum is available in the NRC Agencywide Documents Access and Management System [ADAMS] under Accession No. ML052360044).

Additional, technical, non-public information: See additional discussion of terms below.

67) What do the following terms mean?

- Annual exceedance frequency
- Core damage frequency
- Design basis earthquake or safe shutdown earthquake
- Ground acceleration
- High confidence of low probability of failure capacity
- Large early release frequency
- Seismic hazard
- Seismic margin
- Seismic risk

Public Answer: The terms are defined as follows:

Annual exceedance frequency (AEF) – Number of times per year that a site's ground motion is expected to exceed a specified acceleration.

***Core damage frequency (CDF)* – Expected number of core damage events per unit of time.** *Core damage* refers to the uncovery and heat-up of the reactor core, to the point that prolonged oxidation and severe fuel damage are not only anticipated but also involve enough of the core to result in off-site public health effects if released. *Seismic core damage frequency* refers to the component of total CDF that is due to seismic events.

Design basis earthquake* or *safe shutdown earthquake (SSE) – A *design basis earthquake* is a commonly employed term for the *safe shutdown earthquake* (*SSE*); the SSE is the earthquake ground shaking for which certain structures, systems, and components are designed to remain functional. In the past, the SSE has been commonly characterized by a standardized spectral shape associated with a peak *ground acceleration* value.

Ground acceleration – Acceleration produced at the ground surface by seismic waves, typically expressed in units of *g*, the acceleration of gravity at the earth's surface.

High confidence of low probability of failure (HCLPF) capacity – A measure of *seismic margin*. In *seismic risk* assessment, *HCLPF capacity* is defined as the earthquake motion level, at which there is high confidence (95%) of a low probability (at most 5%) of failure of a structure, system, or component.

Large early release frequency (LERF) – The expected number of large early releases per unit of time. A *large early release* is the rapid, unmitigated release of airborne fission products from the containment building to the environment, occurring before the effective implementation of off-site emergency response and protective actions, such that there is a potential for early health effects. *Seismic large early release frequency* refers to the component of total LERF that is due to seismic events.

Seismic hazard – Any physical phenomenon, such as ground motion or ground failure, that is associated with an earthquake and may produce adverse effects on human activities (such as posing a risk to a nuclear facility).

Seismic margin – The difference between a plant's capacity and its seismic design basis (*safe shutdown earthquake, or SSE*).

Seismic risk – The risk (frequency of occurrence multiplied by its consequence) of severe earthquake-initiated accidents at a nuclear power plant. A severe accident is an accident that causes core damage, and, possibly, a subsequent release of radioactive materials into the environment. Several risk metrics may be used to express *seismic risk*, such as seismic *core damage frequency* and seismic *large early release frequency*.

68) Let's say there's an estimate expressed as "2.5E-06." (I'm looking at Table D-2 of the safety/risk assessment of August 2010.) I believe that this expression means the same as 2.5 x 10^-06, or 0.0000025, or 2.5 divided by one million. In layman's terms, that means an expectation, on average, of 2.5 events every million years, or once every 400,000 years. Similarly, "2.5E-05" would be 2.5 divided by 100,000, or 2.5 events every 100,000 years, on average, or once every 40,000 years. Is this correct?

Public Response: Yes, at least partly. In the subject documents the frequencies for core damage or ground motion exceedance have been expressed in the form "2.5E-06". As you noted this is equivalent to 2.5x10-6, or 0.000025 per year. If, for example, the core damage frequency was estimated as 2.5E-06, this would be equivalent to an expectation of 2.5 divided by a million per year. It is not really correct to think of these values as "once every 400,000 years," the two numbers are mathematically equivalent but do not convey the same statistical meaning within this context. Rather, you could characterize it as 1 in 400,000 per year of something occurring.

Additional, technical, non-public information: None

69) The GI-199 documents give updated probabilistic seismic hazard estimates for existing nuclear power plants in the Central and Eastern U.S. What document has the latest seismic hazard estimates (probabilistic or not) for existing nuclear power plants in the Western U.S.?

Public Response: At this time the staff has not formally developed updated probabilistic seismic hazard estimates for the existing nuclear power plants in the Western U.S. However, NRC staff during the mid- to late-1990's reviewed the plants' assessments of potential consequences of severe ground motion from earthquakes beyond the plant design basis as part of the Individual Plant Examination of External Events (IPEEE) program. From this review, the NRC staff determined that the seismic designs of operating plants in the U.S. have adequate safety margin. NRC staff has continued to stay abreast of the latest research on seismic hazards in the Western U.S. and interface with colleagues at the U.S. Geological Survey. The focus of Generic Issue 199 has been on the CEUS. However, the Information Notice that summarized the results of the Safety/Risk Assessment was sent to all existing power reactor licensees. The documents that summarize existing hazard estimates are contained in the Final Safety Analysis Reports (FSARS) and in the IPEEE submittals. It must be noted that following 9/11 the IPEEE documents are no longer publicly available.

Additional, technical, non-public information: None

70) The GI-199 documents refer to newer data on the way. Have NRC, USGS et al. released those? I'm referring to this: "New consensus seismic-hazard estimates will become available in late 2010 or early 2011 (these are a product of a joint NRC, U.S. Department of Energy, U.S. Geological Survey (USGS) and Electric Power Research Institute (EPRI) project). These consensus seismic hazard estimates will supersede the existing EPRI, Lawrence Livermore National Laboratory, and USGS hazard estimates used in the GI-199 Safety/Risk Assessment."

Public Response: The new consensus hazard curves are being developed in a cooperative project that has NRC, U.S. Department of Energy, U.S. Geological Survey (USGS) and Electric Power Research Institute (EPRI) participation. The title is: the Central and Eastern U.S. Seismic Source Characterization (CEUS-SSC) project. The project is being conducted following comprehensive standards to ensure quality and regulatory defensibility. It is in its final phase and is expected to be publicly released in the fall of 2011. The project manager is Larry Salamone (Lawrence.salamone@srs.gov, 803-645-9195) and the technical lead on the project is Dr. Kevin Coppersmith (925-974-3335, kcoppersmith@earthlink.net). Additional information on this project can be found at: http://mydocs.epri.com/docs/ANT/2008-04.pdf, and http://my.epri.com/portal/server.pt?open=512&objID=319&&PageID=218833&mode=2&in_hi_userid=2&cached=true.

Additional, technical, non-public information: None

71) What is the timetable now for consideration of any regulatory changes from the GI-199 research?

Public Response: The NRC is working on developing a Generic Letter (GL) to request information from affected licensees. The GL will likely be issued in a draft form within the next 2 months to stimulate discussions with industry in a public meeting. After that it has to be approved by the Committee to Review Generic Requirements, presented to the Advisory Committee on Reactor Safeguards and issued as a draft for formal public comments (60 days). After evaluation of the public comments it can then be finalized for issuance. We expect to issue the GL by the end of this calendar year, as the new consensus seismic hazard estimates become available. The information from licensees will likely require 3 to 6 months to complete. Staff's review will commence after receiving licensees' responses. Based on staff's review, a determination can be made regarding cost beneficial backfits where it can be justified.

Additional, technical, non-public information: None

Seismic Probabilistic Risk Assessment (SPRA)

72) The NRC increasingly uses risk-information in regulatory decisions. Are risk-informed PRAs useful in assessing an event such as this?

Public response: Nilesh Chokshi to provide Q&As on SPRA

Additional, technical, non-public information: None

Plant-Specific Questions

SONGS questions

73) SONGS received a white finding in 2008 for 125VDC battery issue related to the EDGs that went undetected for 4 years. NRC issued the white finding as there was increased risk that one EDG may not have started due to a low voltage condition on the battery on one Unit (Unit 2). Aren't all plants susceptible to the unknown? Is there any assurance the emergency cooling systems will function as desired in a Japan-like emergency?

Public response: The low voltage condition was caused by a failure to properly tighten bolts on a electrical breaker that connected the battery to the electrical bus that would be relied on to start the EDG in case of a loss of off-site power. This was corrected immediately on identification and actions taken to prevent its reoccurrence. The 3 other EDGs at SONGS were not affected.

Additional, technical, non-public information: None

74) Has the earthquake hazard at SONGS been reviewed like DCNPP is doing? Are they planning on doing an update before relicensing?

Public Answer: Relicensing does not evaluate the potential change to seismic siting of a plant. If there is a seismic design concern, it would be addressed for the plant as it is currently operating.

The closest active fault is approximately five miles offshore from San Onofre, a system of folds and faults exist called the OZD. The Cristianitos fault is ½ mile southeast, but is an inactive fault. Other faults such as the San Andreas and San Jacinto, which can generate a larger magnitude earthquake, are far enough away that they would produce ground motions less severe than the OZD for San Onofre.

Past history relative to nearby major quakes have been of no consequences to San Onofre. In fact, three major earthquakes from 1992 to 1994 (Big Bear, Landers and Northridge), ranging in distance from 70-90 miles away and registering approximately 6.5 to 7.3 magnitude, did not disrupt power production at San Onofre. The plant is expected to safely shutdown if a major earthquake occurs nearby. Safety related structures, systems and components have been designed and qualified to remain functional and not fail during and after an earthquake.

Additional, technical, non-public information: None

75) Is possible to have a tsunami at songs that is capable of damaging the plant?

Public Information: The San Onofre Units 2 and 3 plant grade is elevation +30.0 feet MLLW. The controlling tsunami for San Onofre occurring during simultaneous high tide and storm surge produces a maximum runup to elevation +15.6 feet MLLW at the Unit 2 and 3 seawall. When storm waves are superimposed, the predicted maximum runup is to elevation +27 MLLW. Tsunami protection for the SONGS site is provided by a reinforced concrete seawall constructed to elevation +30.0 MLLW. A tsunami greater than this height is extremely unlikely.

Additional, technical, non-public information: None

76) Does SONGS have an emergency plan for tsunami?

Public Response: The SONGS emergency plan does initiate the emergency response organization and results in declaration of emergency conditions via their EALs. The facility would then make protective

action recommendations to the Governor, who would then decide on what protective actions would be ordered for the residents around SONGS.

Additional, technical, non-public information: None

77) Has evacuation planning at SONGS considered tsunami?

Public Response: These considerations would be contained in the State and local (City, County) emergency plans, which are reviewed by FEMA. FEMA then certifies to the NRC that they have "reasonable assurance" that the off-site facilities can support operation of SONGS in an emergency.

Additional, technical, non-public information: None

78) Is SONGS designed against tsunami and earthquake?

Public Response: Yes. SONGS is designed against both tsunami and earthquake.

Additional, technical, non-public information: None

79) What is the height of water that SONGS is designed to withstand?

Public Response: 30 feet. Information for all plants can be found in the "Additional Information' section of this document.

Additional, technical, non-public information: None

80) What about drawdown and debris?

Public Response: *Good question...can HQ answer? Goutam, Henry, or Rich...can you help with this one?*

Additional, technical, non-public information: None

81) Will this be reviewed in light of the Japan quake.

Public Response: The NRC will do a through assessment of the lessons learned from this event and will review all potential issues at US nuclear plants as a result.

Additional, technical, non-public information: None

82) Could all onsite and offsite power be disrupted from SONGS in the event of a tsunami, and if that happened, could the plant be safely cooled down if power wasn't restored for days after?

Public Response: Seismic Category I equipment is equipment that is essential to the safe shutdown and isolation of the reactor or whose failure or damage could result in significant release of radioactive material. All Seismic Category I equipment at SONGS is designed to function following a DBE with ground acceleration of 0.67g.

The operating basis earthquake (1/2 of the DBE) is characterized by maximum ground shaking of 0.33g. Historically, even this level of ground shaking has not been observed at the site. Based on expert analysis, the average recurrence interval for 0.33g ground shaking at the San Onofre site would be in excess of 1000 years and, thus, the probability of occurrence in the 40-year design life of the plant would be less than 1 in 25. The frequency of the DBE would be much more infrequent, and very unlikely to occur during the life of the plant. Even if an earthquake resulted in greater than the DBE movement/acceleration at SONGS, the containment structure would ultimately protect the public from harmful radiation release, in the event significant damage occurred to Seismic category 1 equipment.

Additional, technical, non-public information: None

83) Are there any faults nearby SONGS that could generate a significant tsunami?

Public Response: Current expert evaluations estimate a magnitude 7 earthquake about 4 miles from SONGS. This is significantly less than the Japan quake, and SONGS has been designed to withstand this size earthquake without incident. Should discuss the different tectonic nature (not a subduction zone like Japan)?

Additional, technical, non-public information: None

84) What magnitude or shaking level is SONGS designed to withstand? How likely is an earthquake of that magnitude for the SONGS site?

Public Response: The design basis earthquake (DBE) is defined as that earthquake producing the maximum vibratory ground motion that the nuclear power generating station is designed to withstand without functional impairment of those features necessary to shut down the reactor, maintain the station in a safe condition, and prevent undue risk to the health and safety of the public. The DBE for SONGS was assessed during the construction permit phase of the project. The DBE is postulated to occur near the site (5 miles), and the ground accelerations are postulated to be quite high (0.67g), when compared to other nuclear plant sites in the U.S (0.25g or less is typical for plants in the eastern U.S.). Based on the unique seismic characteristics of the SONGS site, the site tends to amplify long-period motions, and to attenuate short-period motions. These site-specific characteristics were accounted for in the SONGS site-specific seismic analyses.

Additional, technical, non-public information: None

85) Could SONGS withstand an earthquake of the magnitude of the Japanese earthquake?

Public Response: We do not have current information on the ground motion at the Japanese reactors. SONGS was designed for approximately a 7.0 magnitude earthquake 4 miles away. The Japanese earthquake was much larger (8.9), but was also almost 9 miles away. The local ground motion at a particular plant is significantly affected by the local soil and bedrock conditions. SONGS was designed (,67g) to withstand more than 2 times the design motion at average US plants.

Additional, technical, non-public information: None

86) What about the evacuation routes at SONGS? How do we know they are reasonable?

Public Response: FEMA reviews off-site evacuation plans formally every 2 years during a biennial emergency preparedness exercise. NRC evaluates on-site evacuation plans during the same exercise. Population studies are formally done every 10 years, and evacuation time estimates are re-evaluated at that time. FEMA reviews these evacuation plans, and will conclude their acceptability through a finding of "reasonable assurance" that the off-site facilities and infrastructure is capable of protecting public health and safety in the event of an emergency at SONGS. The next such exercise is planned for April 12, 2011.

Additional, technical, non-public information: None

87) Regarding tsunami at Diablo and SONGS, is the tsunami considered separately from flooding in licensing? And from the design perspective, is the flood still the controlling event for those plants rather than the tsunami?

Public response: See below

88) What is the design level flooding for DNCPP and SONGS? Can a tsunami be larger?

Public response: Both the Diablo Canyon (main plant) and SONGS are located above the flood level associated with tsunami. However, the intake structures and Auxiliary Sea Water System at Diablo canyon are designed for combination of tsunami-storm wave activity. SONGS has reinforced concrete cantilevered retaining seawall and screen well perimeter wall designed to withstand the design basis earthquake, followed by the maximum predicted tsunami with coincident storm wave action·

Additional, technical, non-public information: None

89) Is there potential linkage between the South Coast Offshore fault near San Onofre NPP and the Newport-Inglewood Fault system and/or the Rose Canyon fault? Does this potential linkage impact the maximum magnitude that would be assigned to the South Coast Offshore fault and ultimately to the design basis ground motions for this facility?

Public response: Stephanie and Jon to answer (you may want to change the question) based on the discussions in the articles sent by Lara U.

Additional, technical, non-public information: Proposed action is to check the FSAR for San Onofre and read the discussion on characterization of the offshore fault. A quick look at discussion of the Newport Ingelwood from other sources suggest this is part of the "system". It would be helpful to check the basis for segmenting the fault in the FSAR. Probably have to dig on this a bit, may need to look at the USGS/SCEC/ model for this area.

Diablo Canyon Questions

90) Now after the Japan tragedy, will the NRC finally hear us (A4NR) and postpone DC license renewal until seismic studies are complete? How can you be sure that what happened there is not going to happen at Diablo with a worse cast quake and tsunami?

Public response: ADD

Additional, technical, non-public information: ADD

91) The evacuation routes at DCNPP see are not realistic. Highway 101 is small...and can you imagine what it will be like with 40K people on it? Has the evacuation plan been updated w/ all the population growth?

Public Response: FEMA reviews off-site evacuation plans formally every 2 years during a biennial emergency preparedness exercise. NRC evaluates on-site evacuation plans during the same exercise. Population studies are formally done every 10 years, and evacuation time estimates are re-evaluated at that time. FEMA reviews these evacuation plans, and will conclude their acceptability through a finding of "reasonable assurance" that the off-site facilities and infrastructure is capable of protecting public health and safety in the event of an emergency at DCNPP.

Additional, technical, non-public information: None

92) Are there local offshore fault sources capable of producing a tsunami with very short warning times?

Public Response: ADD- question forwarded to region

Additional, technical, non-public information: ADD

93) Are there other seismically induced failure modes (other than tsunami) that would yield LTSBO? Flooding due to dam failure or widespread liquefaction are examples.

Public Response: ADD question forwarded to region

Additional, technical, non-public information: ADD

94) Ramifications of beyond design basis events (seismic and tsunami) and potential LTSBO on spent fuel storage facilities?

Public Response: ADD question forwarded to region

Additional, technical, non-public information: ADD

95) Why did a Emergency Warning go out for a 'tsunami' that was only 6 ft high? Do these guys really know what they're doing? Would they know it if a big one was really coming? Crying wolf all the time doesn't instill a lot of confidence.

Public Response: The warning system performed well. The 6 foot wave was predicted many hours before and arrived at the time it was predicted. Federal officials to accurately predicted the tsunami arrival time and size; allowing local official to take appropriate measures as they saw necessary to warn and protect the public. It should be understood that even a 6 foot tsunami is very dangerous. Tsunami have far more energy and power than wind-driven waves.

Additional, technical, non-public information: ADD

96) **How big did the Japanese think a quake/tsunami could be before 3/11? Why were they so wrong (assuming this quake/tsunami was bigger than what they had designed the plant for)?**

Public Response: ADD can HQ answer?

Additional, technical, non-public information: ADD

The Japanese were supposed to have one of the best tsunami warning systems around. What went wrong last week (both with the reactors and getting the people out...see #1, evacuation plan above)?

Public Response: ADD can HQ answer?

Additional, technical, non-public information: ADD

97) **Regarding tsunami at Diablo and SONGS, is the tsunami considered separately from flooding in licensing? And from the design perspective, is the flood still the controlling event for those plants rather than the tsunami?**

Public Response: Both the Diablo Canyon (main plant) and SONGS are located above the flood level associated with tsunami. However, the intake structures and Auxiliary Sea Water System at Diablo canyon are designed for combination of tsunami-storm wave activity. SONGS has reinforced concrete cantilevered retaining seawall and screen well perimeter wall designed to withstand the design basis earthquake, followed by the maximum predicted tsunami with coincident storm wave action

Additional, technical, non-public information: ADD

NOTE: need to add to SONGS and DCNPP... Canyon and San Onofre IPEEEs - based on the Technical Evaluation Reports, Diablo did consider a locally induced tsunami in a limited way (the aux service water pumps were assumed to become flooded following a seismic event) while SONGS did not consider a coupled seismic/tsunami event.

98) **Shouldn't the NRC make licensees consider a Tsunami coincident with a seismic event that triggers the Tsunami?**

ADD

99) **Given that SSCs get fatigued over time, shouldn't the NRC consider after-shocks in seismic hazard analyses?**

ADD

100) **Did the Japanese also consider an 8.9 magnitude earthquake and resulting tsunami "way too low a probability for consideration"?**

ADD

101) GI-199 shows that the scientific community doesn't know everything about the seismicity of CEUS. And isn't there a prediction that the West coast is likely to get hit with some huge earthquake in the next 30 years or so? Why does the NRC continue to license plants on the west coast?

ADD

Work the following into Q&As as time permits.

After an earthquake, in orderto restart, In practice a licensee needs to determine from engineering analysis that the stresses on the plant did not exceed their licensed limits. That would be a very tall order for a plant that experienced a beyond design basis quake, and probably is why it had taken Japan so long to restore the KK plants following the earlier quake.

Has industry done anything on tsunami hazards? Also, has anyone done work to look at the effect of numerous cycles of low amplitude acceleration following a larger event. I would expect we would have some information because how do we know a plant would be fit to start back up after an event? We cannot possibly do NDE on everything to determine if flaws have propagated to the point where they need to be replaced.

Indian Point Questions

102) Why is Indian Point safe if there is a fault line so close to it?

Public Response: The Ramapo fault system, which passes through the Indian Point area, is a group of Mesozoic age faults, extending from southeastern New York to northern New Jersey, as well as further southwest. The fault system is composed of a series of southeast-dipping, northeast-striking faults. Various faults of the system contain evidence of repeated slip in various directions since Proterozoic time, including Mesozoic extensional reactivation. However, the USGS staff, who reviewed 31 geologic features in the Appalachian Mountains and Coastal Plain and compiled a National Database on Quaternary Faulting (Crone and Wheeler, 2000), listed the Ramapo fault system as low risk because the fault system lacks evidence for Quaternary slip. They further pointed out that the Ramapo fault system, and 17 other geologic features, "have little or no published geologic evidence of Quaternary tectonic faulting that could indicate the likely occurrence of earthquakes larger than those observed historically" (Wheeler and Crone, 2004). Among these faults, the Ramapo fault system is one of the three that underwent a paleoseismological study. In two trenches excavated across the Ramapo fault, no evidence of Quaternary tectonic faulting was found (Wheeler and Crone, 2000). Because the Ramapo fault system is relatively inactive, because the Indian Point plants are built on solid bedrock, and because the plants are designed to safely shutdown in the event of an earthquake of the highest intensity ever recorded in that area, the NRC has concluded that the risk of significant damage to the reactors due to a probable earthquake in the area is extremely small.

Additional, technical, non-public information: The Question asks: Why is Indian Point safe if there is a fault line beneath it? The response focuses on the Ramapo fault (within a couple of miles not directly beneath) specifically and also states that the plant is designed for the largest observable earthquake. The information is consistent with the literature and the UFSAR for IP related to the Ramapo fault.

The letter that was sent to the NRC from Rep Lowey refers to the Ramapo seismic zone (RSZ) and the Dobbs Ferry fault. The letter incorrectly states that the Dobbs Ferry fault is located within the Ramapo seismic zone. Based on the literature, it is not. It is close, but it is considered to be in the Manhattan Prong more to the east (more like 10-15 miles away) while the Ramapo fault system is considered to be in the Reading Prong (a couple of miles away from IP). Also for clarification, the seismicity is considered to be within the Precambrian/Paleozoic basement at depths greater than the Mesozoic Newark Basin where the RSZ is situated.

103) Comments From the letter received 3/16/11 from Congresswoman Lowey:

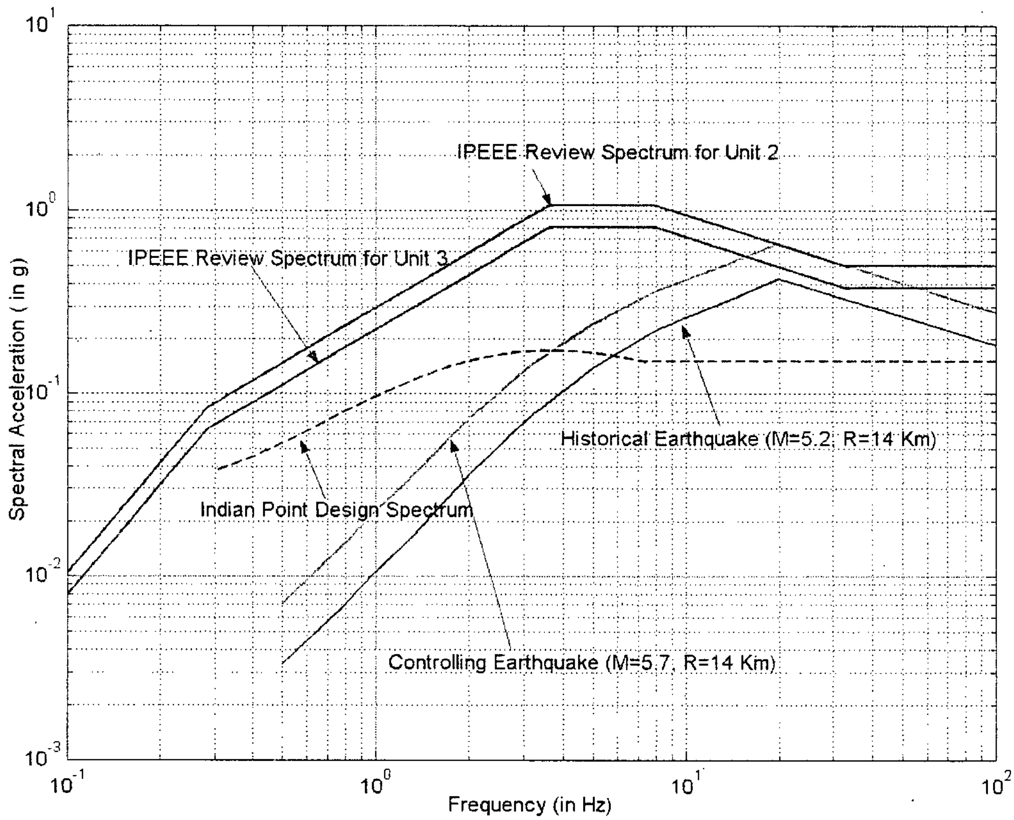
Text of the letter:

A 2008 study by seismologists at the Columbia University Lamont-Doherty Earth Observatory found that earthquakes in the New York metropolitan area are common and that risks are particularly high due to infrastructure and high population. A 3.9 magnitude earthquake occurred in the Atlantic Ocean approximately 80 miles off Long Island as recently as November 30, 2010. In fact, there have been five earthquakes in the same area in the past two decades, including a 4.7 magnitude earthquake in 1992.

The Ramapo Seismic Zone is a particular threat because the zone passes within two miles of Indian Point. The Ramapo Seismic zone includes the Dobbs Ferry fault in Westchester, which generated a 4.1 magnitude earthquake in 19S5. The Columbia University study suggests that this pattern of subtle but active faults increases the risk to the New York City area and that an earthquake with a magnitude of 7.0 on the Richter scale is within reach. Disturbingly, Entergy measures the risk of an earthquake near Indian Point to be between 1.0 and 3.0 on the Richter scale, despite evidence to the contrary.

As our nation stands ready to assist the Japanese to calm this potential nuclear meltdown and disaster, we must not let the same mistakes happen on our shores. The NRC should study Indian Point's risk of, and ability to sustain a disaster, including the impact of earthquakes and hurricanes, as well as collateral impacts such as loss of power, inability to cool reactors and emergency evacuation routes. The NRC should evaluate how a similar incident in the New York metropolitan area could be further complicated due to a dramatically higher population and the effectiveness of the proposed evacuation routes.

NRR has the lead in response. We can assist NRR at their request. Either way, we need to turn this into appropriate questions and then provide answers consistent with the formal response.



Questions for the Japanese

NOTE: These were all collected from what we produced after the KKNPP earthquake. These need to be gone through and revised for this event. We should separate into high, medium and low priorities:

The below is pulled from an KKNPP summary...to be reviewed...

What seismic monitoring equipment exists at the plants? Can we get the recordings from the
Are there recordings of the tsunami at the plant location?
What is the geology and soil profile at the plants?
NOAA has a prediction of very large tsunami waves at Onagawa. Are these accurate?

The below is pulled from an KKNPP summary...to be reviewed...

DESIGN BASES: Exactly what is the design basis ground motion for each of the plants? Did it change through time (i.e. from the first plant to the seventh)? Where was the design basis motion defined, at the top of rock, at the ground surface, at the floor level or somewhere else? Were the site-specific geotechnical properties used in the development of the design basis ground motions for each plant?

SEISMIC HAZARDS: What assumptions were used in the seismic hazard evaluation to arrive at the design basis ground motions? What faults were considered, what magnitudes and geometries were assumed? What activity rates were assumed for both fault sources and "background" earthquakes?

OBSERVATIONS-GROUND MOTIONS: What ground motions were recorded and where were they recorded? Specifically, what free-field, in-structure and down-hole recordings were obtained? What are the locations of the instruments that obtained records? Did all the instruments respond as planned, or are there lessons to be learned? Can the digital data be shared with the NRC? Is there any way of evaluating how well the existing analysis methods predicted the observed motions at different points within the plant?

OBSERVATIONS-DAMAGE: What damage was observed at the plants? How well did equipment such as cranes perform? Were there observations of displacements of equipment from anchorages, were cracks observed in any of the buildings? How well did non-nuclear safety type of buildings and equipment perform? What types of geotechnical phenomena were observed, was there ground deformation/slope failures, lateral spreading or liquefaction near the facility? Did the ABWRs perform better or similar to the older designs?

And another set from the KKNPP earthquake...to be reviewed...

Please provide the following information in the time frame indicated:

Highest Priority Questions – as soon as possible

- A timeline describing the order of events and the individual plant responses to the earthquake
- Confirmation that all operating and shut down units achieved or maintained safe-shutdown conditions without manual operator intervention or complications. Did all safety-related systems respond to the seismic scram as designed? Please note if there were any unexpected plant responses to the event, including any spurious signals.
- A more detailed description of the impacts of the earthquake on the plant (e.g., what systems were involved, which pipes were damaged, where did the leakage occur (pipe wall, joints, fittings,,etc).
- A description of seismic instrumentation at the site and at each of the 7 units, soil/rock shear wave properties through depth, instrument location and mounting condition, all the recorded

data on the basis of unified starting time, such that the coherency of motion through the surface or the foundations and at depth can be determined

- Full spectrum seismic design basis for the plant.
- What actually caused the Unit 3B house transformer fire?

Additional Questions – please provide answers as more information is developed

- Damage to buildings, slope failures, intake structure failure, if any
- Behavior of cranes, cables and conduits
- Failures of any large pumps and valves, pipe mounted control or valve failure
- Instances of any relay or vibration sensitive components malfunctioning
- Nature of damage to service water and fire-suppression piping - their diameter, material they are made of including their elastic properties, design standards used for the piping design, nature of failure (at support, anchor motion, failure of anchors, subsidence differential movement etc)
- Were there any systems that changed state?
- Impact on physical security, and any vulnerabilities identified
- Were there any impacts on the grid because of the event?
- Please describe the switchyard performance?
- What emergency preparedness concerns have been identified as a result of the event?

3B Transformer Specific Questions – please respond when there is time and other issues have been addressed

- What are the primary and secondary voltages of the transformer?
- What type of transformer - liquid or dry-type (air-cooled)?
- Who was the manufacturer of the transformer?
- What are the physical dimensions of the transformer?
- How are the transformer coils restrained within the cabinet?
- What is the clearance between transformer energized component and cabinet?
- What is the relative displacement for connection between the high voltage leads and the first anchor point (adequate slack?) in the transformer?
- What was the natural frequency of the burned transformer, if known?
- What was the acceleration level (or the response spectrum, if available) at the support location of the burned transformer?
- What seismic requirements exist for the burned transformer? Was the transformer tested or analyzed to a specific acceleration or response spectra, and if so, what are they?
- Are there any of the same type of transformer installed at other locations in the plant?

Additional Information

Table of Design Basis Ground Motions for US Plants

Design Basis Earthquake Information					
Nuclear Plant By State/Location	**Maximum Observed Or Inferred Intensity (MMI Scale)**	**Relative Distance Of Seismic Source**	**Design SSE Peak Acceleration, *g***	**OBE Peak Acceleration, *g***	**Soil Condition**
New York					
Fitzpatrick	VI	Near	0.15	0.08	Soil
Ginna 1	VIII/IX	>60 miles	0.2	0.08	Rock
Indian Point 2, 3	VII	Near	0.15	0.1	Rock
Nine Mile Point 1	IX-X	>60 miles	0.11	0.06	Rock
Nine Mile Point 2	VI	Near	0.15	0.075	Rock
New Jersey					
Salem 1,2	VII-VIII	Near	0.2	0.1	Deep Soil
Connecticut					
Millstone 1, 2, 3	VII	Near	0.17	0.07	Rock
Vermont					
Vermont Yankee	VI	Near	0.14	0.07	Rock
Ohio					
Davis Besse 1	VII	Near	0.15	0.08	Rock
Perry 1	VII	Near	0.15	0.08	Rock
Georgia					
Hatch 1, 2	VII	Near	0.15	0.08	Deep Soil
Vogtle 1, 2	VII-VIII	Near	0.2	0.12	Deep Soil
Tennessee					
Seqouyah 1, 2	VIII	Near	0.18	0.09	Rock
Watts Bar 1	VIII	Near	0.18	0.09	Rock
California					
San Onofre 2, 3	IX-X	Near	0.67	0.34	Soil
Diablo Canyon 1, 2	X-XI	Near	0.75	0.20	Rock
Florida					

Crystal River 3	V	Near	0.10	0.05	Rock
St. Lucie 1, 2	VI	Near	0.10	0.05	Soil
Turkey Point 3, 4	VII	Near	0.15	0.05	Rock

NOTES:

MMI=Modified Mercalli Intensity, a measure of observed/reported damage and severity of shaking.
Relative distance measure used in FSAR to develop SSE acceleration, "Near" indicates distance less than 10 miles.
SSE=Safe Shutdown Earthquake ground motion, for horizontal acceleration, in units of earth's gravity, *g*.
OBE=Operating Basis Earthquake ground motion, level of horizontal acceleration, which if exceeded requires plant shutdown.

Table of SSE, OBE and Tsunami Water Levels

Nuclear Plant Name By State/ Location	Safe Shutdown Earthquake (SSE) Peak Acceleration (g)	Operating Basis Earthquake (OBE) Peak Acceleration, (g)	Probable Maximum Tsunami OR Maximum Tsunami Water Level
Alabama			
Browns Ferry	0.200	0.100	N/A (Non-Coastal)
Farley	0.100	0.050	N/A (Non-Coastal)
Arkansas			
Arkansas Nuclear	0.200		N/A (Non-Coastal)
Arizona			
Palo Verde	0.200	0.100	N/A (Non-Coastal)
California			
Diablo Canyon	0.400	0.200	The design basis maximum combined wave runup is the greater of that determined for near-shore or distantly-generated tsunamis, and results from near-shore tsunamis. For distantly-generated tsunamis, the combined runup is 30 feet. For near-shore tsunamis, the combined wave runup is 34.6 feet, as determined by hydraulic model testing. The safety-related equipment is installed in watertight compartments to protect it from adverse sea wave events to elevation +48 feet above MLLW.
San Onofre	0.670	0.340	The controlling tsunami occurs during simultaneous high tide and storm surge produces a maximum runup to elevation +15.6 feet mean lower low water line (mllw) at the Unit 2 and 3 seawall. When storm waves are superimposed, the predicted maximum runup is to elevation +27 mllw. Tsunami protection for the SONGS site is provided by a reinforced concrete seawall constructed to elevation +30.0 mllw.
Connecticut			
Millstone	0.170	0.090	18 ft SWL
Florida			
Crystal River	0.050	0.025	N/A (Non-Coastal)

Nuclear Plant Name By State/ Location	Safe Shutdown Earthquake (SSE) Peak Acceleration (g)	Operating Basis Earthquake (OBE) Peak Acceleration, (g)	Probable Maximum Tsunami OR Maximum Tsunami Water Level
St. Lucie	0.100	0.050	No maximum tsunami level, bounded by PMH surge of +18 MLW wave runup, with plant openings at +19.5 MLW
Turkey Point	0.150	0.050	No maximum tsunami level, bounded by PMH surge of +18.3 MLW water level, site protected to +20 MLW with vital equipment protected to +22 MLW
Georgia			
Hatch	0.150	0.080	N/A (Non-Coastal)
Vogtle	0.200	0.120	N/A (Non-Coastal)
Illinois			
Braidwood	0.200	0.090	N/A (Non-Coastal)
Byron	0.200	0.090	N/A (Non-Coastal)
Clinton	0.250	0.100	N/A (Non-Coastal)
Dresden	0.200	0.100	N/A (Non-Coastal)
LaSalle	0.200	0.100	N/A (Non-Coastal)
Quad Cities	0.240	0.120	N/A (Non-Coastal)
Iowa			
Duane Arnold	0.120	0.060	N/A (Non-Coastal)
Kansas			
Wolf Creek	0.120	0.060	N/A (Non-Coastal)
Louisiana			
River Bend	0.100	0.050	
Waterford	0.100		Floods – 30 feet MSL
Maryland			
Calvert Cliffs	0.150	0.080	14 ft design wave
Massachusetts			
Pilgrim	0.150	0.080	*Storm flooding design basis - 18.3ft
Michigan			
D.C. Cook	0.200	0.100	N/A
Fermi	0.150	0.080	N/A
Palisades	0.200	0.100	N/A

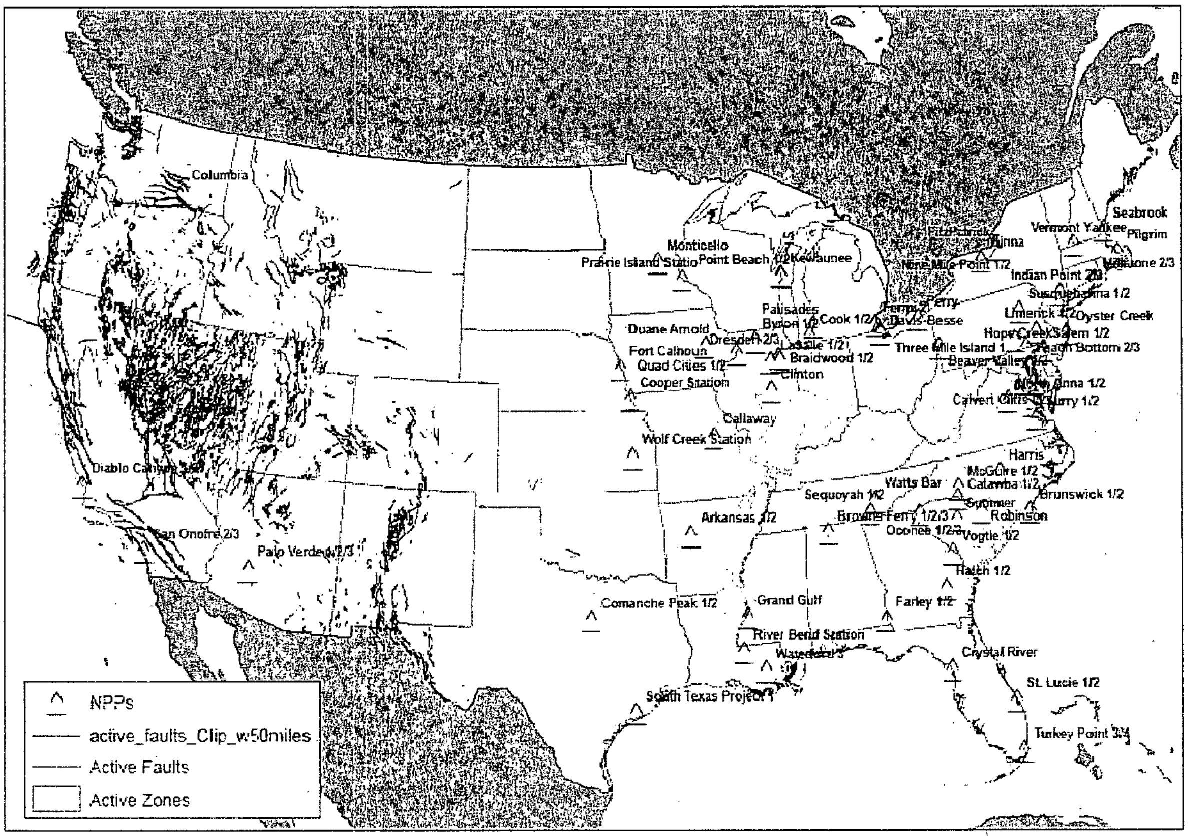
Nuclear Plant Name By State/ Location	Safe Shutdown Earthquake (SSE) Peak Acceleration (g)	Operating Basis Earthquake (OBE) Peak Acceleration, (g)	Probable Maximum Tsunami OR Maximum Tsunami Water Level
Missouri			
Callaway	0.200		N/A (Non-Coastal)
Mississippi			
Grand Gulf	0.150	0.075	N/A
Minnesota			
Monticello	0.120	0.060	N/A (Non-Coastal)
Prarie Island	0.120	0.060	N/A (Non-Coastal)
Nebraska			
Cooper	0.200	0.100	N/A (Non-Coastal)
Fort Calhoun	0.170	0.080	N/A (Non-Coastal)
New York			
Fitzpatrick	0.150	0.080	N/A (Non-Coastal)
Ginna	0.200	0.080	N/A
Indian Point	0.150	0.100	15 ft msl
Nine Mile Point, Unit 1	0.110	0.060	N/A
Nine Mile Point, Unit 2	0.150	0.075	N/A
New Hampshire			
Seabrook	0.250	0.125	(+) 15.6' MSL Still Water Level (Tsunami Flooding -Such activity is extremely rare on the U.S. Atlantic coast and would result in only minor wave action inside the harbor.)
New Jersey			
Hope Creek	0.200	0.100	35.4 MSL The maximum probable tsunami produces relatively minor water level changes at the site. The maximum runup height reaches an elevation of 18.1 feet MSL with coincident 10 percent exceedance high tide)
Oyster Creek	0.184	0.092	(+) 23.5' MSL Still Water Level (Probable Maximum Tsunami - Tsunami events are not typical of the eastern coast of the United States and have not, therefore, been addressed.)

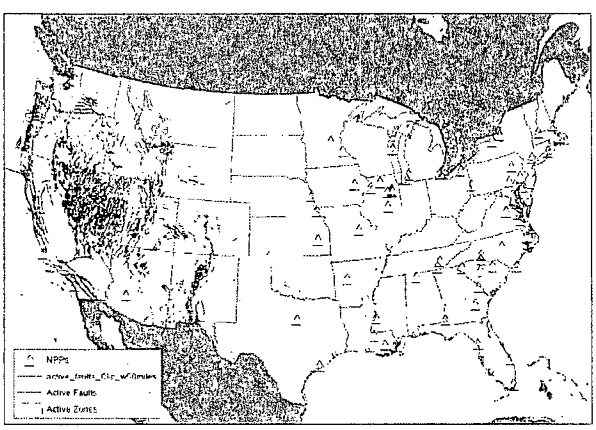
Nuclear Plant Name By State/ Location	Safe Shutdown Earthquake (SSE) Peak Acceleration (g)	Operating Basis Earthquake (OBE) Peak Acceleration, (g)	Probable Maximum Tsunami OR Maximum Tsunami Water Level
Salem	0.200	0.100	21.9 MSL (There is no evidence of surface rupture in East Coast earthquakes and no history of significant tsunami activity in the region)
North Carolina			
Brunswick	0.160	0.030	N/A
McGuire	0.150	0.080	N/A (Non-Coastal)
Shearon Harris	0.150		N/A (Non-Coastal)
Ohio			
Davis-Besse	0.150	0.080	N/A
Perry	0.150	0.080	N/A
Pennsylvania			
Beaver Valley	0.130	0.060	N/A (Non-Coastal)
Limerick	0.150	0.075	N/A (Non-Coastal)
Peach Bottom	0.120	0.050	N/A (Non-Coastal)
Three Mile Island	0.120	0.060	N/A (Non-Coastal)
Susquehanna	0.150	0.080	N/A (Non-Coastal)
South Carolina			
Catawba	0.150	0.080	N/A (Non-Coastal)
Oconee	0.150	0.050	N/A (Non-Coastal)
Robinson	0.200	0.100	N/A (Non-Coastal)
V.C. Summer	0.250	0.150	N/A (Non-Coastal)
Tennessee			
Sequoyah	0.180	0.090	N/A (Non-Coastal)
Watts Bar, Unit 1	0.180	0.090	N/A (Non-Coastal)
Texas			
Comanche Peak	0.120	0.060	N/A
South Texas Project	0.100	0.050	N/A
Vermont			

Nuclear Plant Name By State/ Location	Safe Shutdown Earthquake (SSE) Peak Acceleration (g)	Operating Basis Earthquake (OBE) Peak Acceleration, (g)	Probable Maximum Tsunami OR Maximum Tsunami Water Level
Vermont Yankee	0.140	0.070	N/A
Virginia			
North Anna	0.180		N/A
Surry	0.150	0.080	N/A
Washington			
Columbia	0.250		N/A (Non-Coastal)
Wisconsin			
Kawaunee	0.120	0.060	N/A
Point Beach	0.120		N/A
Definition of Safe Shutdown Earthquake	The safe-shutdown earthquake (SSE) for the site is the ground motion response spectra (GMRS), which also satisfies the minimum requirement of paragraph IV(a)(1)(i) of Appendix S, "Earthquake Engineering Criteria for Nuclear Power Plants," to Title 10, Part 50, "Domestic Licensing of Production and Utilization Facilities," of the Code of Federal Regulations (10 CFR Part 50).		
Definition of Operating Basis Earthquake:	To satisfy the requirements of paragraph IV(a)(2)(A) of Appendix S to 10 CFR Part 50, the operating-basis earthquake (OBE) ground motion is defined as follows: (iv) For the certified design portion of the plant, the OBE ground motion is one-third of the CSDRS. (v) For the safety-related noncertified design portion of the plant, the OBE ground motion is one-third of the design motion response spectra, as stipulated in the design certification conditions specified in design control document (DCD). (vi) The spectrum ordinate criterion to be used in conjunction with Regulatory Guide 1.166, "Pre-Earthquake Planning and Immediate Nuclear Power Plant Operator Post-earthquake Actions," issued March 1997, is the lowest of (i) and (ii).		

Plot of Mapped Active Quaternary Faults and Nuclear Plants in the US

It is important to note that this plot somewhat misleading as faults in the central and eastern US are not well characterized. For example, the faults responsible for very large historic events, such as the 1811 and 1812 New Madrid Earthquakes, and the 1886 Charleston Earthquakes have not been conclusively located.



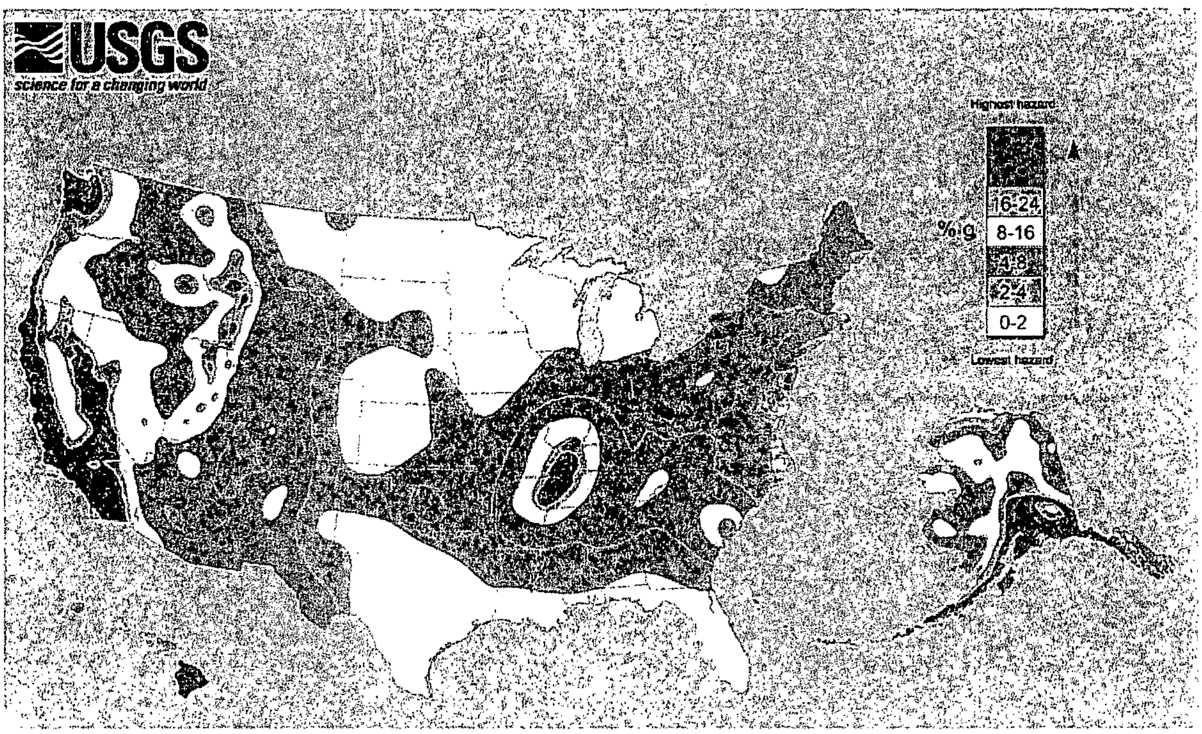


Nuclear Plants in the US Compared to the USGS National Seismic Hazard Maps

Dogan to create the map

USGS US National Seismic Hazard Maps

Many version of this map are available at the USGS website at http://earthquake.usgs.gov/hazards/



Plot of Nuclear Plants in the US Compared to Recent Earthquakes

Not sure of the date on this...It's an awesome plot. can we get this updated with a date? Who made this originally (NRO?RES?)

Table of Plants Near Known Active Faults

It should be noted that in much of the Central and Eastern US, the seismicity comes from "background" seismicity. Background seismicity is earthquake activity, where the earthquakes cannot be tied to known faults.

Jon Ake and Dogan Seber to complete. High priority to support chairman in response to questions asked by congress.

PLACEHOLDER ONLY....TO BE COMPLETED ON 3/17/11 PLEASE DON'T USE!!!

Plant (state)	Nearest Active Fault or Fault Zone	Distance to Fault or Range of Distances to Zones	Type of Faulting Mechanism	Range of Maximum Magnitude (M_w)	OBE (g)	SSE (g)
Columbia						
Diablo Canyon (CA)	Hosgri Fault	5 miles	Predominantly Strike Slip	7.5		
	Shoreline Fault	0.5 miles	Strike Slip	6.25 to 6.75 best estimate by NRC staff in RIL 09-001. Final report on the fault in review by NRC staff		
San Onofre (CA)						
Comanche Peak	Meers					

Table From GI-199 Program Containing SSE, SSE Exceedance Frequencies, Review Level Earthquakes, and Seismic Core Damage Frequencies

Plant	Docket	SSE (g's)	Frequency of Exceeding the SSE (per year)	RLE (HCLPF) (g's)	Seismic Core Damage Frequency (per year)	IPEEE Method	Source
Arkansas 1	05000313	0.2	2.8E-04	0.3	4.1E-06	0.3g full-scope EPRI SMA	GI-199
Arkansas 2	05000368	0.2	9.7E-05	0.3	4.1E-06	0.3g focused-scope EPRI SMA	GI-199
Beaver Valley 1	05000334	0.12	3.3E-04	n/a	4.8E-05	seismic PRA	GI-199
Beaver Valley 2	05000412	0.12	2.7E-04	n/a	2.2E-05	seismic PRA	GI-199
Braidwood 1	05000456	0.2	6.7E-05	0.3	7.3E-06	0.3g focused-scope EPRI SMA	GI-199
Braidwood 2	05000457	0.2	6.7E-05	0.3	7.3E-06	0.3g focused-scope EPRI SMA	GI-199
Browns Ferry 1	05000259	0.2	2.5E-04	0.3	3.7E-06	0.3g focused-scope EPRI SMA	GI-199
Browns Ferry 2	05000260	0.2	2.5E-04	0.26	5.4E-06	0.3g focused-scope EPRI SMA	GI-199
Browns Ferry 3	05000296	0.2	2.5E-04	0.26	5.4E-06	0.3g focused-scope EPRI SMA	GI-199
Brunswick 1	05000325	0.16	7.3E-04	0.3	1.5E-05	0.3g focused-scope EPRI SMA	GI-199
Brunswick 2	05000324	0.16	7.3E-04	0.3	1.5E-05	0.3g focused-scope EPRI SMA	GI-199
Byron 1	05000454	0.2	5.2E-05	0.3	5.8E-06	0.3g focused-scope EPRI SMA	GI-199
Byron 2	05000455	0.2.	5.2E-05	0.3	5.8E-06	0.3g focused-scope EPRI SMA	GI-199
Callaway	05000483	0.2	3.8E-05	0.3	2.0E-06	0.3g focused-scope EPRI SMA	GI-199
Calvert Cliffs 1	05000317	0.15	1.9E-04	n/a	1.0E-05	seismic PRA	GI-199
Calvert Cliffs 2	05000318	0.15	1.9E-04	n/a	1.2E-05	seismic PRA	GI-199
Catawba 1	05000413	0.15	1.4E-04	n/a	3.7E-05	seismic PRA	GI-199
Catawba 2	05000414	0.15	1.4E-04	n/a	3.7E-05	seismic PRA	GI-199
Clinton	05000461	0.25	5.8E-05	0.3	2.5E-06	0.3g focused-scope EPRI SMA	GI-199
Columbia	05000397	0.25	1.7E-04	n/a	2.1E-05	seismic PRA	IPEEE
Comanche Peak 1	05000445	0.12	1.6E-05	0.12	4.0E-06	reduced-scope EPRI SMA; SSE = 0.12g	GI-199
Comanche	05000446	0.12	1.6E-05	0.12	4.0E-06	reduced-scope EPRI SMA; SSE =	GI-199

Plant	Docket	SSE (g's)	Frequency of Exceeding the SSE (per year)	RLE (HCLPF) (g's)	Seismic Core Damage Frequency (per year)	IPEEE Method	Source
Peak 2						0.12g	
Cooper	05000298	0.2	1.5E-04	0.3	7.0E-06	0.3g focused-scope EPRI SMA	GI-199
Crystal River 3	05000302	0.1	8.9E-05	0.1	2.2E-05	reduced-scope EPRI SMA; SSE = 0.1g	GI-199
D.C. Cook 1	05000315	0.2	2.1E-04	n/a	2.2E-05	seismic PRA	GI-199
D.C. Cook 2	05000316	0.2	2.1E-04	n/a	2.2E-05	seismic PRA	GI-199
Davis Besse	05000346	0.15	6.3E-05	0.26	6.7E-06	reduced-scope EPRI SMA	GI-199
Diablo Canyon 1	05000275	0.75	2.0E-04	n/a	4.1E-05	seismic PRA	IPEEE
Diablo Canyon 2	05000323	0.75	2.0E-04	n/a	4.1E-05	seismic PRA	IPEEE
Dresden 2	05000237	0.2	9.7E-05	0.26	1.9E-05	0.3g focused-scope EPRI SMA	GI-199
Dresden 3	05000249	0.2	9.7E-05	0.26	1.9E-05	0.3g focused-scope EPRI SMA	GI-199
Duane Arnold	05000331	0.12	2.3E-04	0.12	3.2E-05	reduced-scope EPRI SMA; SSE = 0.12g	GI-199
Farley 1	05000348	0.1	1.0E-04	0.1	2.8E-05	reduced-scope EPRI SMA; SSE = 0.1g	GI-199
Farley 2	05000364	0.1	1.0E-04	0.1	2.8E-05	reduced-scope EPRI SMA; SSE = 0.1g	GI-199
Fermi 2	05000341	0.15	1.0E-04	0.3	4.2E-06	0.3g focused-scope EPRI SMA	GI-199
Fitzpatrick	05000333	0.15	3.2E-04	0.22	6.1E-06	0.3g focused-scope NRC SMA	GI-199
Fort Calhoun 1	05000285	0.17	3.7E-04	0.25	5.4E-06	0.3g focused-scope NRC SMA	GI-199
Ginna	05000244	0.2	1.0E-04	0.2	1.3E-05	0.3g focused-scope EPRI SMA	GI-199
Grand Gulf	05000416	0.15	1.0E-04	0.15	1.2E-05	reduced-scope EPRI SMA; SSE = 0.15g	GI-199
Hatch 1	05000400	0.148	3.9E-04	0.29	2.3E-06	0.3g focused-scope EPRI SMA	GI-199
Hatch 2	05000321	0.15	2.7E-04	0.3	2.5E-06	0.3g focused-scope EPRI SMA	GI-199

Plant	Docket	SSE (g's)	Frequency of Exceeding the SSE (per year)	RLE (HCLPF) (g's)	Seismic Core Damage Frequency (per year)	IPEEE Method	Source
Hope Creek	05000366	0.2	9.7E-05	0.3	2.5E-06	0.3g focused-scope EPRI SMA	GI-199
Indian Point 2	05000354	0.15	4.9E-04	n/a	2.8E-06	seismic PRA	GI-199
Indian Point 3	05000247	0.15	4.9E-04	n/a	3.3E-05	seismic PRA	GI-199
Kewaunee	05000286	0.12	2.8E-04	n/a	1.0E-04	seismic PRA	GI-199
LaSalle 1	05000305	0.2	1.7E-04	n/a	5.1E-06	seismic PRA	GI-199
LaSalle 2	05000373	0.2	1.7E-04	n/a	2.8E-06	seismic PRA	GI-199
Limerick 1	05000374	0.15	1.8E-04	n/a	2.8E-06	seismic PRA	GI-199
Limerick 2	05000352	0.15	1.8E-04	0.15	5.3E-05	reduced-scope EPRI SMA	GI-199
McGuire 1	05000353	0.15	9.5E-05	0.15	5.3E-05	reduced-scope EPRI SMA	GI-199
McGuire 2	05000369	0.15	9.5E-05	n/a	3.1E-05	seismic PRA	GI-199
Millstone 1	05000370	0.254	9.3E-05	n/a	3.1E-05	seismic PRA	GI-199
Millstone 2	05000336	0.17	8.3E-05	0.25	1.1E-05	0.3g focused-scope EPRI SMA	GI-199
Millstone 3	05000423	0.17	8.3E-05	n/a	1.5E-05	seismic PRA	GI-199
Monticello	05000263	0.12	9.3E-05	0.12	1.9E-05	modified focused/expended reduced-scope EPRI SMA	GI-199
Nine Mile Point 1	05000220	0.11	1.5E-04	0.27	4.2E-06	0.3g focused-scope EPRI SMA	GI-199
Nine Mile Point 2	05000410	0.15	4.8E-05	0.23	5.6E-06	SPRA and focused-scope EPRI SMA	GI-199
North Anna 1	05000338	0.12	2.1E-04	0.16	4.4E-05	0.3g focused-scope EPRI SMA	GI-199
North Anna 2	05000339	0.12	2.1E-04	0.16	4.4E-05	0.3g focused-scope EPRI SMA	GI-199
Oconee 1	05000269	0.1	9.7E-04	n/a	4.3E-05	seismic PRA	GI-199
Oconee 2	05000270	0.1	9.7E-04	n/a	4.3E-05	seismic PRA	GI-199
Oconee 3	05000287	0.1	9.7E-04	n/a	4.3E-05	seismic PRA	GI-199
Oyster Creek	05000219	0.17	1.5E-04	n/a	1.4E-05	seismic PRA	GI-199
Palisades	05000255	0.2	1.4E-04	n/a	6.4E-06	seismic PRA	GI-199
Palo Verde 1	05000528	0.258	3.5E-05	0.3	3.8E-05	0.3g full-scope EPRI SMA	IPEEE
Palo Verde 2	05000529	0.258	3.5E-05	0.3	3.8E-05	0.3g full-scope EPRI SMA	IPEEE

Plant	Docket	SSE (g's)	Frequency of Exceeding the SSE (per year)	RLE (HCLPF) (g's)	Seismic Core Damage Frequency (per year)	IPEEE Method	Source
Palo Verde 3	05000530	0.258	3.5E-05	0.3	3.8E-05	0.3g full-scope EPRI SMA	IPEEE
Peach Bottom 2	05000277	0.12	2.0E-04	0.2	2.4E-05	modified focused-scope EPRI SMA	GI-199
Peach Bottom 3	05000278	0.12	2.0E-04	0.2	2.4E-05	modified focused-scope EPRI SMA	GI-199
Perry	05000440	0.15	2.2E-04	0.3	2.1E-05	0.3g focused-scope EPRI SMA	GI-199
Pilgrim 1	05000293	0.15	8.1E-04	n/a	6.9E-05	seismic PRA	GI-199
Point Beach 1	05000266	0.12	2.0E-04	n/a	1.1E-05	seismic PRA	GI-199
Point Beach 2	05000301	0.12	2.0E-04	n/a	1.1E-05	seismic PRA	GI-199
Prairie Island 1	05000282	0.12	2.0E-04	0.28	3.0E-06	0.3g focused-scope EPRI SMA	GI-199
Prairie Island 2	05000306	0.12	2.0E-04	0.28	3.0E-06	0.3g focused-scope EPRI SMA	GI-199
Quad Cities 1	05000254	0.24	8.2E-04	0.09	2.7E-05	0.3g focused-scope EPRI SMA	GI-199
Quad Cities 2	05000265	0.24	8.2E-04	0.09	2.7E-05	0.3g focused-scope EPRI SMA	GI-199
River Bend	05000458	0.1	2.4E-04	0.1	2.5E-05	reduced-scope EPRI SMA; SSE = 0.1g	GI-199
Robinson (HR)	05000261	0.2	1.1E-03	0.28	1.5E-05	0.3g full-scope EPRI SMA	GI-199
Saint Lucie	05000335	0.1	1.4E-04	0.1	4.6E-05	reduced-scope EPRI SMA; SSE = 0.1g	GI-199
Salem 1	05000389	0.2	2.6E-04	0.1	4.6E-05	reduced-scope EPRI SMA; SSE = 0.1g	GI-199
Salem 2	05000272	0.2	2.6E-04	n/a	9.3E-06	seismic PRA	GI-199
San Onofre 2	05000361	0.67	1.2E-04	n/a	1.7E-05	seismic PRA	IPEEE
San Onofre 3	05000362	0.67	1.2E-04	n/a	1.7E-05	seismic PRA	IPEEE
Seabrook	05000311	0.25	1.3E-04	n/a	9.3E-06	seismic PRA	GI-199
Sequoyah 1	05000443	0.18	7.1E-04	n/a	2.2E-05	seismic PRA	GI-199
Sequoyah 2	05000327	0.18	7.1E-04	0.27	5.1E-05	0.3g full-scope EPRI SMA	GI-199
Shearon Harris 1	05000328	0.15	4.6E-05	0.27	5.1E-05	0.3g full-scope EPRI SMA	GI-199
South Texas 1	05000498	0.1	3.0E-05	n/a	6.2E-06	seismic PRA	GI-199

Plant	Docket	SSE (g's)	Frequency of Exceeding the SSE (per year)	RLE (HCLPF) (g's)	Seismic Core Damage Frequency (per year)	IPEEE Method	Source
South Texas 2	05000499	0.1	3.0E-05	n/a	6.2E-06	seismic PRA	GI-199
Summer	05000395	0.15	3.9E-04	0.22	3.8E-05	0.3g focused-scope EPRI SMA	GI-199
Surry 1	05000280	0.15	2.2E-04	n/a	5.7E-06	seismic PRA	GI-199
Surry 2	05000281	0.15	2.2E-04	n/a	5.7E-06	seismic PRA	GI-199
Susquehanna 1	05000387	0.1	1.9E-04	0.21	1.3E-05	0.3g focused-scope EPRI SMA	GI-199
Susquehanna 2	05000388	0.1	1.9E-04	0.21	1.3E-05	0.3g focused-scope EPRI SMA	GI-199
Three Mile Island 1	05000289	0.12	1.0E-04	n/a	4.0E-05	seismic PRA	GI-199
Turkey Point 3	05000250	0.15	3.8E-05	0.15	1.0E-05	site-specific approach; SSE=0.15g	GI-199
Turkey Point 4	05000251	0.15	3.8E-05	0.15	1.0E-05	site-specific approach; SSE=0.15g	GI-199
Vermont Yankee	05000271	0.14	1.2E-04	0.25	8.1E-06	0.3g focused-scope EPRI SMA	GI-199
Vogtle 1	05000424	0.2	1.5E-04	0.3	1.8E-05	0.3g focused-scope EPRI SMA	GI-199
Vogtle 2	05000425	0.2	1.5E-04	0.3	1.8E-05	0.3g focused-scope EPRI SMA	GI-199
Waterford 3	05000382	0.1	1.1E-04	0.1	2.0E-05	reduced-scope EPRI SMA; SSE = 0.1g	GI-199
Watts Bar	05000390	0.18	2.9E-04	0.3	3.6E-05	0.3g focused-scope EPRI SMA	GI-199
Wolf Creek	05000482	0.12	3.7E-05	0.2	1.8E-05	reduced-scope EPRI SMA	GI-199
		25th percentile	9.6E-05		6.0E-06		
		min	1.6E-05		2.0E-06		
		median	1.7E-04		1.5E-05		
		mean	3.1E-04		2.1E-05		
		max	3.9E-03		1.0E-04		
		75th percentile	2.6E-04		3.2E-05		

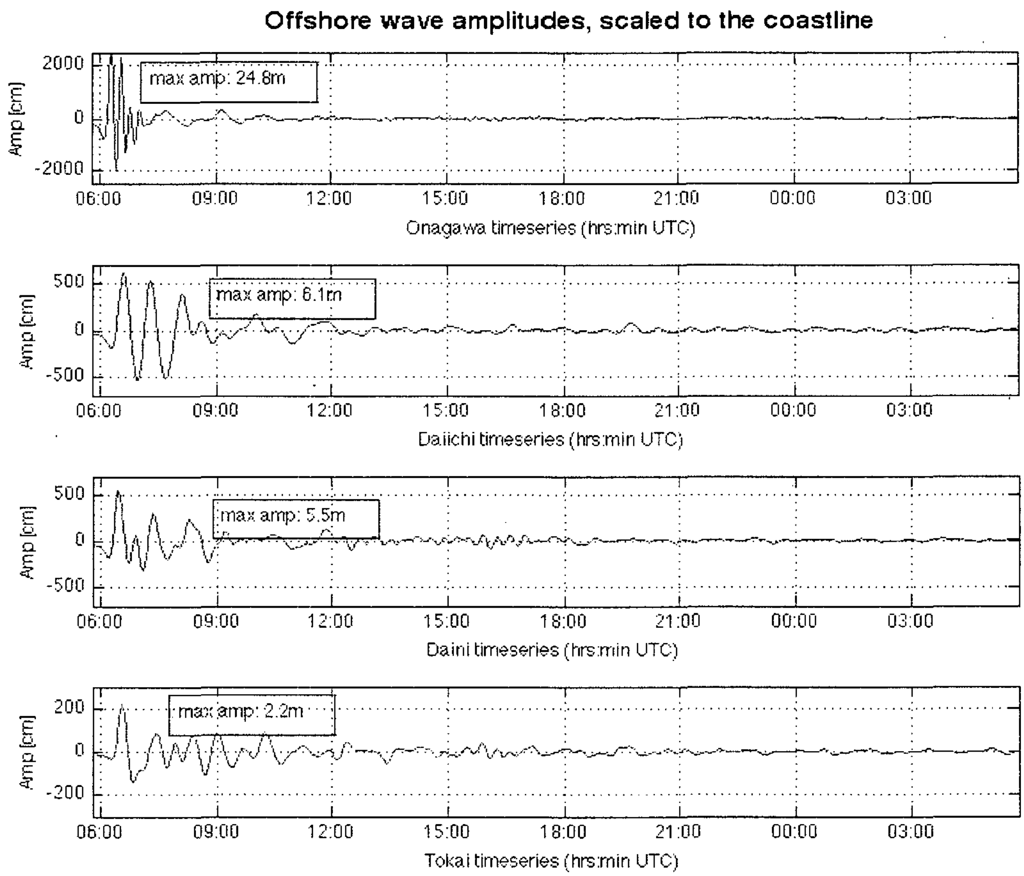
Summary of seismological information from regional instrumentation

Placeholder: Rasool Anooshehpoor is developing.

Tsunami Wave Heights at the Japanese Plants (unofficial from NOAA)

The below plots were developed for NRC seismic staff a few hours after the earthquake and tsunami by the PMEL group of NOAA. This group is responsible for scientific development of the models and tools used by the US tsunami warning system, as well as notification elements of system itself.

On 3/16/11, the PMEL NOAA team informed NRC staff that additional analyses have generally confirmed the below estimates and so they don't expect the final official numbers at the plant locations to change much.



Fact Sheet on Protection of Nuclear Power Plants against Tsunami Flooding

Nuclear power plants are designed to withstand the effects of natural phenomena such as earthquakes, tornadoes, hurricanes, floods, tsunami, and seiches without loss of capability to perform their safety functions. The word tsunami literally means harbor wave. Tsunamis can be generated by large offshore earthquakes (usually greater than magnitude 6.5), submarine or on shore land slides or volcanoes. Some large onshore earthquakes close to the shoreline can generate tsunami. The Nuclear Regulatory Commission (NRC) requires all nuclear power plants to be protected against earthquakes, tsunamis and other natural hazards.

Background

Protection against tsunami effects was required for all operating plants and is required for all new reactors. Following the Indian Ocean tsunami on December 26, 2004, the President moved to protect lives and property by launching an initiative to improve domestic tsunami warning capabilities. This plan was placed under the auspices of the National Science and Technology Council through the President's initiative in July 2005 in the context of a broad national effort of tsunami risk reduction, and United States participated in international efforts to reduce tsunami risk worldwide. In response to the president's initiative, the NRC reviewed its licensing criteria and conducted independent studies and participated in international forums under the auspices of the International Atomic Energy Agency with many participating countries including India and Japan. The final report of the study was published in April 2009 as NUREG/CR 6966, "Tsunami Hazard Assessment at Nuclear Power Plant Sites in the United States of America," ADAMS Accession # ML0915901933. NRC revised its Standard Review Plan for conducting safety reviews of nuclear power plants in 2007. Section 2.4.6 specifically addresses tsunamis. The Office of Nuclear Regulatory Research is conducting tsunami studies in collaboration with the United States Geological Survey and has published a report on tsunami hazard in the Atlantic, Gulf and Pacific coastal areas. Selected nuclear power plants now get tsunami warning notification. The agency requires plant designs to withstand the effects of natural phenomena including effects of tsunamis. The agency's requirements, including General Design Criteria for licensing a plant, are described in Title 10 of the *Code of Federal Regulations* (10 CFR). These license requirements consist of incorporating margins in the initiating hazard and additional margins are due to traditional engineering practices such as "safety factors." Practices such as these add an extra element of safety into design, construction, and operations.

The NRC has always required licensees to design, operate, and maintain safety-significant structures, systems, and components to withstand the effects of natural hazards and to maintain the capability to perform their intended safety functions. The agency ensures these requirements are satisfied through the licensing, reactor oversight, and enforcement processes.

Tsunami Hazard Evaluation

Tsunami hazard evaluation is one component of the complete hydrological review requirements provided in the Standard Review Plan under Chapter 2.4. The safety determination of reactor sites require consideration of major flood causing events, including consideration of combined flood causing conditions. These conditions include Probable Maximum Flood (PMF) on Streams and Rivers, Potential Dam Failures, Probable Maximum Surge and Seiche Flooding and Probable Maximum Tsunami Hazards, among others. The most significant flooding event is called the design basis flood and flooding protection requirements are correlated to this flood level in 2.4.10.

The Probable Maximum Tsunami (PMT) is defined as that tsunami for which the impact at the site is derived from the use of best available scientific information to arrive at a set of scenarios reasonably expected to affect the nuclear power plant site taking into account (a) appropriate consideration of the most severe of the natural phenomena that have been historically reported or determine from geological and physical data for the site and surrounding area, with sufficient margin for the limited accuracy, quantity, and period of time in which the historical data have been accumulated, (b) appropriate combinations of the effects of normal and accident conditions with the effects of the natural phenomena, and (c) the importance of the safety functions to be performed.

Site-specific tsunami data are collected from historical tsunami records, paleotsunami evidence, regional tsunami assessments, site-specific tsunami mechanisms, site-specific data, such as submarine survey of

sea bed and approach channel geometry. Effects of tsunami on a nuclear power plant can be flooding due to water run up, hydro-dynamic pressure on exterior walls of structures, impact of floating debris, and foundation scouring. In addition, tsunami can draw down water from the intake source of plant cooling water.

The tsunami database is available for interactive search and downloads on the internet at http://www.ngdc.noaa.gov/hazard/tsu.shtml.

Tsunami Safety Assessment

The licensing bases for existing nuclear power plants are based on historical data at each site. This data is used to determine probable maximum tsunami and the tsunami effects are evaluated for each site with potential for tsunami flooding. The potential for tsunami hazard is determined on a hierarchical analysis process that can identify tsunami potential based primarily on distance from tsunami source and site elevation. The NRC also required existing plants to assess their potential vulnerability to external events, as part of the Individual Plant Examination of External Events Program. This process ensured that existing plants are not vulnerable to tsunami hazard, and they continue to provide adequate public health and safety.

Today, the NRC utilizes a risk-informed regulatory approach, including insights from probabilistic assessments and traditional deterministic engineering methods to make regulatory decisions about existing plants (e.g., licensing amendment decisions). Any new nuclear plant the NRC licenses will use a probabilistic, performance-based approach to establish the plant's seismic hazard and the seismic loads for the plant's design basis.

Operating Plants

The NRC is fully engaged in national international tsunami hazard mitigation programs, and is conducting active research to refine the tsunami sources in the Atlantic, Gulf Coast and Pacific Coast areas. Diablo Canyon (DC) and San Onofre (SONGS) are two nuclear plant sites that have potential for tsunami hazard. Both the DC (main plant) and SONGS are located above the flood level associated with tsunami. However, the intake structures and Auxiliary Sea Water System at DC are designed for combination of tsunami-storm wave activity to 45 ft msl. SONGS has a reinforced concrete cantilevered retaining seawall and screen well perimeter wall designed to withstand the design basis earthquake, followed by the maximum predicted tsunami with coincident storm wave action, designed to protect at approximately 27 ft msl. These reactors are adequately protected against tsunami effects. Distant tsunami sources for DC include the Aleutian area, Kuril-Kamchatka region, and the South American coast (for Songs the Aleutian area). Distant sources for SONGS is limited by the presence of a broad continental shelf. Local or near sources for DC include the Santa Lucia Bank and Santa Maria Basin Faults (for Songs the Santa Ana wind).

Additional Information

To read more about risk-related NRC policy, see the fact sheets on Probabilistic Risk Assessment (http://www.nrc.gov/reading-rm/doc-collections/fact-sheets/probabilistic-risk-asses.html) and Nuclear Reactor Risk (http://www.nrc.gov/reading-rm/doc-collections/fact-sheets/reactor-risk.html). Each provides more information on the use of probability in evaluating hazards (including earthquakes) and their potential impact on plant safety margins. Other regulatory framework includes General Design Criterion 2, 10 CFR Part 100.23, Regulatory Guide 1.102 "Flood Protection for Nuclear Power Plants", Rev. 1 1976, Regulatory Guide 1.59 "Design Basis for Nuclear Power Plants" Rev. 2 1977 (update in progress), and USNRC Standard Review Plan "Probable Maximum Tsunami Flooding" Section 2.4.6, Rev. 2.

March 2011

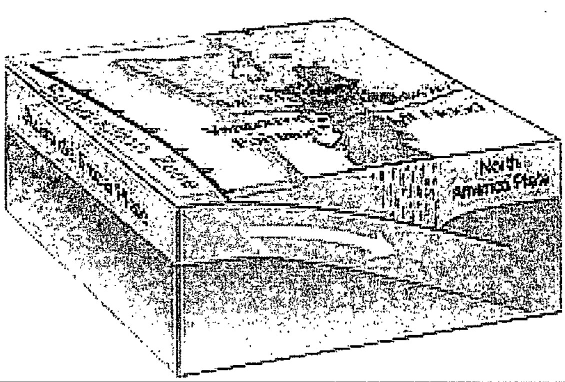
Seismicity of the Central and Eastern US Fact Sheet

Key Points:

- To date, very large earthquakes (Magnitudes greater than 8.25) have only occurred in specific geological settings, in particular the interfaces between tectonic plates in major **subduction zones**. The only subduction zone that potentially impacts the continental U.S. is the Cascadia zone off the coast of northern California, Oregon and Washington.
- Recent analyses of the magnitudes of the largest earthquakes **not associated** with subduction zones indicates magnitudes are less than ~8.25.
- The size (magnitude) of earthquakes is proportional to the fault area that slips in a given earthquake. The prediction of earthquake magnitudes for a specific fault considers the dimensions of the fault. Extremely large earthquakes do not occur on small faults.
- Nuclear power plants are licensed based on vibratory ground shaking, not earthquake magnitude. The ground shaking (accelerations) are used to estimate forces which are used in the seismic design process. In many cases smaller magnitude earthquakes closer to a site produce more severe ground shaking than larger, more distant earthquakes. Hence it is important to consider all potential earthquake sources regardless of magnitude.

Discussion: Earthquakes with very large magnitudes such as the March 2011 earthquake off the northeast coast of the Japanese island of Honshu occur within subduction zones, which are locations where one of the earth's tectonic plates is subducting beneath (being thrust under) another. The fault that defines the Japan Trench plate boundary dips to the west, i.e., becomes deeper towards the coast of Honshu. Large offshore earthquakes have historically occurred in the same subduction zone (in 1611, 1896, and 1933) all of which produced significant tsunami waves. The magnitudes of these previous large earthquakes have been estimated to be between 7.6 and 8.6. Prior to March 2011, the Japan Trench subduction zone has produced nine earthquakes with magnitudes greater than 7 just since 1973.

The only subduction zone that is capable of directly impacting the continental US is the Cascadia subduction zone, which lies off of the coast of northern California, Oregon, and Washington. The fault surface defined by this interface dips to the east (becomes deeper) beneath the coast. The Cascadia subduction zone is capable of producing very large earthquakes if all or a large portion of the fault area ruptures in a single event. However, the rate of earthquake occurrence along the Cascadia subduction zone is much less than has been observed along the Japan Trench subduction zone. The only operating nuclear power plant in that area is Columbia, which is far from the coast and the Cascadia subduction zone. *The occurrence of earthquakes on the Cascadia subduction zone has been considered in the evaluation of the Columbia NPP.*



Schematic Illustration of the Cascadia Subduction Zone

The size (magnitude) of earthquakes is proportional to the surface area of a fault that slips in a given earthquake. Large earthquakes are associated with large (long) faults. Hence, the prediction of earthquake magnitudes for a specific fault considers the dimensions of the fault. Identification of fault size is usually based on geologic mapping or the evaluation of spatial patterns of small earthquakes. To provide **a point of comparison**, the length of the fault that slipped during the March 11, 2011 magnitude 9 Japanese earthquake was >620 km, the length of the fault(s) that slipped during the magnitude 7.3 1992 Landers, CA earthquake was ~90 km and the estimated length of the Hosgi fault near Diablo Canyon NPP is 140 km and a magnitude of 7.5 is assigned to that fault. A number of major crustal faults or fault zones (not associated with the Cascadia subduction zone) have been identified that have produced earthquakes of magnitude 7.5 to 8 in the continental US (including California). ***These fault sources have been identified and characterized in seismic hazard assessments.***

Seismic designs at U.S. nuclear power plants are developed in terms of seismic ground motion spectra, which are called the Safe Shutdown Earthquake ground motion response spectra (SSE). Each nuclear power plant is designed to a ground motion level that is appropriate for the geology and tectonics in the region surrounding the plant location. Currently operating nuclear power plants developed their SSEs based on a "deterministic" or "scenario earthquake" basis that account for the largest earthquake expected in the area around the plant. Seismic activity in the regions surrounding U.S. plants is much lower than that for Japan since **most U.S. plants are located in the interior of the stable continental U.S.** The largest earthquakes within the continental U.S. are the 1811-12 New Madrid sequence and the 1886 Charleston, SC, which were estimated to be between about magnitude 6.8 to 7.5. On the west coast of the U.S., the two nuclear power plants are designed to specific ground motions from earthquakes of about magnitude 7+ on faults located just offshore of the plants. The earthquakes on these faults are mainly strike-slip (horizontal motion on near vertical planes) type earthquakes, not subduction zone earthquakes. This fault geometry does not produce large tsunamigenic waves. Therefore, the likelihood of a significant tsunami from these faults is very remote.

Design Basis Ground Motions and New Review Level Ground Motions Used for Review of Japanese Plants

Plant sites	Contributing earthquakes	New DBGM S_s	Original DBGM S_2
Tomari	Earthquakes undefined specifically	550 Gal	370 Gal
Onagawa	Soutei Miyagiken-oki (M8.2)	580	375
Higashidoori	Earthquakes undefined specifically	450	375
Fukushima	Earthquake near the site (M7.1)	600	370
Tokai	Earthquakes undefined specifically	600	380
Hamaoka	Assumed Tokai (M8.0), etc.	800	600
Shika	Sasanami-oki Fault (M7.6)	600	490
Tsuruga	Urazoko-Uchiikemi Fault (M6.9), etc. →Mera-Kareizaki - Kaburagi(M7.8), Shelf edge+B+Nosaka (M7.7)	800	532
Mihama	C, Fo-A Fault (M6.9)→ Shelf edge+B+Nosaka(M7.7)	750	405
Ohi	C, Fo-A Fault (M6.9)→Fo-A+Fo-B （M7.4)	700	405
Takahama	Fo-A Fault (M6.9) →Fo-A+Fo-B(M7.4)	550	370
Shimane	Shinji Fault (M7.1)	600	456
Ikata	Central Tectonic Structure (M7.6)	570	473
Genkai	Takekoba F. （M6.9) → Enhanced uncertainty consideration	540	370
Sendai	Gotandagawa F.(M6.9), F-A(M6.9)	540	372
Kashiwazaki-Kariwa	F-B Fault (M7.0), Nagaoka-plain-west Fault (M8.1)	2300 (R1 side) 1209 (R5 side)	450
Monjyu (Proto Type FBR)	Shiraki-Niu F.(M6.9) , C F.(M6.9)→Shelf edge+B+Nosaka(M7.7), Small Damping	760	408
Shimokita Reprocessing F.	Deto-Seiho F.(M6.8), Yokohama F.(M6.8)	450	320

Status of Review of Japanese NPPs to New Earthquake Levels Based on 2006 Guidance

Utility	Site (Unit)	Type	Dec.2010
Hokkaido	Tomari	PWR	△
Tohoku	Onagawa (Unit1)	BWR	◎
	Higashi-dori	BWR	△
Tokyo	Kashiwazaki-Kariwa	BWR	Unit 1,5,6,7 ◎
	Fukushima-No1	BWR	Unit 3 ◇, 5 ◎
	Fukushima-No2	BWR	Unit 4,5 ◎
Chubu	Hamaoka	BWR	△
Hokuriku	Shika (Unit 2)	BWR	◎
Kansai	Mihama(Unit 1)	PWR	◎
	Ohi(Unit 3,4)	PWR	◎
	Takahama (Unit 3,4)	PWR	◎
Chugoku	Shimane (Unit 1, 2)	BWR	◎
Shikoku	Ikata (Unit 3)	PWR	◎
Kyushu	Genkai (Unit 3)	PWR	◎
	Sendai (Unit 1)	PWR	◎
Japan Atomic Power	Tokai-Daini	BWR	○
	Tsuruga	BWR/PWR	△
JAEA	Monjyu	Proto Type FBR	◎
Japan Nuc. Fuel	Rokkasyo	Reprocessing	◎

◎: NSC review finished, ○: NISA review finished and in NSC review, △: Under review by NISA

US Portable Array briefing sheet for brief congressional staffers

NOTE: This is provided because IRIS participants let us know that here was a discussion about the NRC's involvement in this program. We have been involved in this for the last couple years.

IRIS
CONSORTIUM

The Incorporated Research Institutions for Seismology is the Consortium of Unites States Universities with Major Research Programs in Seismology and Related Fields.

The Transportable Array: A Science Investment that Can Be Leveraged

IRIS is installing the Transportable Array – a set of 400 broadband seismic instruments – in each of more than 1600 sites across the contiguous United States. The instruments operate at each site for two years and then are removed and redeployed further east. Roughly 1100 stations have been installed since 2003, and instruments have been removed from more than 600 of those sites in the western United States.

The National Science Foundation is funding the full cost to "roll" the Transportable Array across the US, more than $90,000,000 over ten years. Comparatively small incremental investments could add significant data that are relevant to the safety of nuclear power plants. These efforts would be uniquely cost effective, since NSF is already funding installation, and they would feed data into an existing, standardized and widely used data management system that already incorporates the vast majority of seismic data from US networks. But these opportunities are time constrained: the array will be fully installed in the contiguous 48 states by late 2013.

More Value from Longer Term Regional Observations

A dense, uniform seismic network is necessary for long-term, broad-area seismic monitoring of the central and eastern United States due to low event recurrence rates and the risk of significant earthquakes ($M>5$) anywhere in the region. Monitoring seismicity in the central and eastern US can be improved by turning selected sites into permanent seismic stations. A total of more than 35 Transportable Array stations have already been "adopted" by several organizations, creating a permanent legacy, but only in the western United States.

A strategic "1-in-4" plan would involve "adoption" of systematically selected stations in the central and eastern United States – every other station in both the east-west and north-south directions, creating a uniform grid of some 250 stations. Long-term regional operation could be combined with two optional enhancements to create a unique observatory for the study of seismicity, source characteristics, attenuation, and local ground acceleration.

Enhancement 1: Acquire Higher Frequency Data

Crustal rigidity in the central and eastern US makes it desirable to record high frequency characteristics of local and regional earthquakes. The existing instruments could be reconfigured to record high frequencies but doing so would nearly triple the data flow, necessitating improvements to the communications infrastructure.

Enhancement 2: Add Strong Motion Sensors

Acquiring strong motion sensors and reconfiguring field computers that record and telemeter the data would help to measure unique effects of severe shaking. The design anticipated this augmentation, and several stations in California and Washington were operated that way. Upgrade would be more efficient at sites that have not yet been installed.

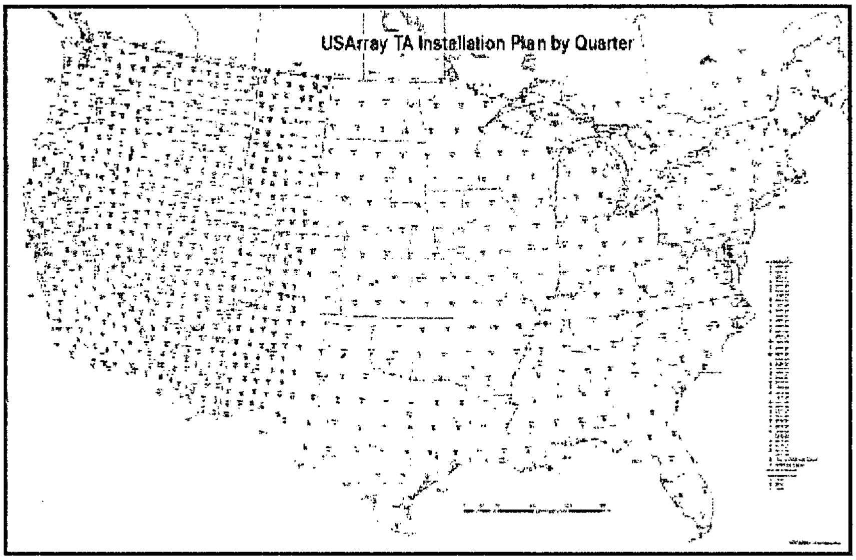
Estimate of annual acquisition and O&M costs for the 1-in-4, 250-station network in central and eastern US.

Year	Stations	Acquisition[1]	O&M[2]	Total
2011	50	$1,800,000	$ 400,000	$2,200,000
2012	50	$1,800,000	$ 800,000	$2,600,000
2013	50	$1.800.000	$1,200.000	$3.000.000
2014	50	$1,800,000	$1,600,000	$3,400,000
2015	50	$1.800.000	$2.000.000	$3.800.000
2016	–	–	$2,000,000	$2,000,000

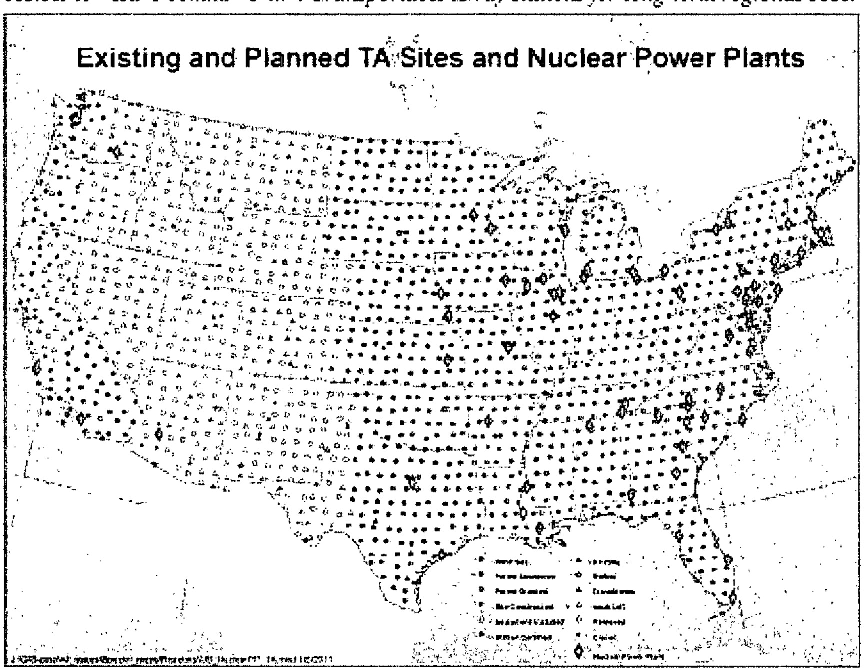
[1] Assumes upgrades to six channel data loggers with strong motion sensors.

[2] Assumes a conservative estimate of $8,000/station/year.

The 1-in-4, 250-station network that could be created in the central and eastern US by "leaving behind" one out of every four Transportable Array stations during the years 2011 through 2015.



A large majority of nuclear power plants are located in the central and eastern parts of the US, where it is still possible to "leave behind" 1-in-4 Transportable Array stations for long-term regional observations.



List of Questions

From: (b)(6)
To:

Subject: FW: monitoring data (latest version)
Date: Thursday, March 17, 2011 8:11:08 PM
Attachments: monitoringdata1103180822.pdf

FYI.

SBU
This email is UNCLASSIFIED

Jennifer Clever
Japan Emergency Command Center
U.S. Embassy, Tokyo

-----Original Message-----
From: TANAKA KANEMITSU [mailto:kanemitsu.tanaka@mofa.go.jp]
Sent: Friday, March 18, 2011 9:01 AM
(b)(6)
Subject: monitoring data (latest version)

Huntington-san,

This is the latest monitoring data.

(As for an email that you sent short time ago, I will respond by another email.)

Thank you,
Kanemitsu

-----Original Message-----
From: TANAKA KANEMITSU
Sent: Friday, March 18, 2011 7:00 AM
(b)(6)
Subject: monitoring data (latest version)

Huntington-san,

This is the latest,

Regards,
Kanemitsu

-------------------------------- Kanemitsu TANAKA (Mr.) Japan-U.S. Security Treaty Division North American Affairs Bureau Ministry of Foreign Affairs TEL +81-3-5501-8000 (ext.2480)

+81-3-5501-8280 (direct)
FAX +81-3-5501-8279
e-mail kanemitsu.tanaka@mofa.go.jp
- -

0

-----Original Message-----
From: SAKAMOTO KENICHI
Sent: Friday, March 18, 2011 4:48 AM
To: 'Huntington, Miki T LTC USA USFJ J54'
Cc: Tokyo PolMil Unit; Status of U.S. Forces Agreement Division; US Embassey; USFJ-CAT-J5; cmht@nnsa.doe.gov; Haas, Craig T GS-14 USFJ J57; (b)(6) (b)(6) (b)(6) TANAKA KANEMITSU
Subject: monitoring data (latest version)

Huntington-san,

This is the latest monitoring data.

Thank you,

Kenichi SAKAMOTO

外務省北米局日米 位 定室 課 補佐
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共有 ← 放射線班より

2011/3/18 7
※太枠箇所が更新箇所

経済産業省
番号 1807553

り → 幹, 2F

福島第一（1F） 西門付近（MP-5付近）（2号機より西約1．1キロ） ※MP－6の放射線によるリスクが高いことから西門付近で測定

3月17日															
モニタリングカー	0:30	0:50	1:30	2:00	2:30	3:00	3:30	4:00	4:30	5:00	5:30	6:00	6:30	7:00	7:30
測定値(μSv/h)	351.4	350.7	348.2	345.9	344.8	344.6	341.7	340.8	339.4	338.3	336.1	334.7	333.8	314.5	313.6
中性子	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D
風向	北東	南南西	東	西	北西	北	西	西	北西	西	西	西	西	西	西
風速(m/s)	1.1	0.4	0.9	0.6	1.6	1.5	1.8	1.8	1.0	1.3	2.3	3.1	3.6	3.7	3.8

福島第一（1F） 体育館付近（MP－5東側）（2号機より西北西約0，9キロ） ※高圧注水活動の作業者のための放射線管理を行うため移動

3月17日							
モニタリングカー	7:50	8:00	8:30	8:40	8:50	9:00	9:10
測定値(μSv/h)	381.3	379.0	373.0	372.5	372.7	373.7	371.9
中性子	N.D	N.D	N.D	N.D	N.D	N.D	N.D
風向	西	南西	西南西	南西	南西	南西	南西
風速(m/s)	3.7	3.7	3.2	3.6	3.4	3.7	3.0

福島第一（1F） 事務本館北（2号機より北西約0．5キロ） ※注水活動による効果を測定するためにより近傍へ移動

3月17日									
モニタリングカー	9:30	9:40	9:50	10:00	10:10	10:20	10:30	10:40	10:50
測定値(μSv/h)	3766.0	3782.0	3763.0	3759.0	3765.0	3764.0	3750.0	3763.0	3743.0
中性子	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D
風向	西	西南西	西	北西	北西	西	西	西南西	南西
風速(m/s)	6.1	6.0	6.8	6.2	5.6	5.2	7.0	4.6	2.2

福島第一（1F） 正門付近前（MP-6付近）（2号機より西南西約1．0キロ） ※入構者のための放射線管理を行うため移動

3月17日		
モニタリングカー	11:00	11:10
測定値(μSv/h)	647.3	646.2
中性子	N.D	N.D
風向	北西	北北西
風速(m/s)	4.8	2.9

福島第一（1F） 西門（MP-5付近）（2号機より西約1．1キロ） ※定点で測定するため移動

3月17日								
モニタリングカー	11:16	11:20	11:30	12:00	12:30	13:00	13:10	13:20
測定値(μSv/h)	313.1	312.5	312.3	311.0	310.7	309.7	309.3	309.1
中性子	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D
風向	北西	西	西北西	西	西	西	西	西
風速(m/s)	4.7	4.4	2.9	3.5	3.6	3.8	3.6	3.1

福島第一（1F） 事務本館北（2号機より北西約0．5キロ） ※注水活動による効果を測定するためにより近傍へ移動

3月17日			
モニタリングカー	13:30	13:40	14:00
測定値(μSv/h)	4175.0	4166.0	3810.0
中性子	N.D	N.D	N.D
風向	北西	西	西
風速(m/s)	4.5	4.7	6.2

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※太枠箇所が更新値

11年03月18日(金) 08時22分

受信時刻 3月18日 8時31分

出力時刻 3月18日 8時33分

福島第一(1F)　西門（MP-5付近）(2号機より西約1．1キロ）※定点で測定するため移動

3月17日

モニタリングカー	14:10	14:30	15:00	15:30
測定値(μSv/h)	311.1	310.3	309.1	309.7
中性子	N.D	N.D	N.D	N.D
風向	北西	西	西	西
風速(m/s)	5.8	3.5	3.2	3.1

福島第一(1F)　事務本館北(2号機より北西約0．5キロ）※注水活動による効果を測定するためにより近傍へ移動

3月17日

モニタリングカー	15:50	15:55	16:00	16:05	16:10	16:15	17:00	17:05	17:10	17:15	17:20	17:25	17:30	17:35	17:40	17:45	17:50	17:55	18:00	18:05	18:10	18:15	18:20
測定値(μSv/h)	3700.0	3699.0	3698.0	3695.0	3695.0	3691.0	3676.0	3676.0	3676.0	3676.0	3672.0	3670.0	3667.0	3665.0	3639.0	3653.0	3650.0	3649.0	3649.0	3645.0	3641.0	3641.0	3645.0
中性子	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D
風向	西	西	西	西	西	西	西	北西	北西	北西	北西	西	北西	北西	西北西	西	西	西	西北西	西	北西	西	西
風速(m/s)	5.2	4.7	4.3	4.1	4.8	4.1	3.1	3.3	2.8	2.7	3.3	3.2	3.4	3.7	3.6	3.3	2.7	2.4	2.1	2.2	2.4	2.4	2.6

3月17日

モニタリングカー	18:25	18:30	18:35	18:40	18:50	19:00	19:10	19:20	19:50	20:00	20:10
測定値(μSv/h)	3643.0	3643.0	3637.0	3638.0	3638.0	3630.0	3626.0	3623.0	3599.0	3601.0	3586.0
中性子	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D
風向	西	西北西	北西	北西	西北西	西南西	西北西	西	北西	北東	西北西
風速(m/s)	2.8	2.7	2.7	2.9	2.4	2.7	2.7	2.3	4.8	1.6	1.4

福島第一(1F)　西門（MP-5付近）(2号機より西約1．1キロ）※放水が終了し、定点で測定するため移動

3月17日

モニタリングカー	20:40	21:00	21:10	21:20	21:30	21:40	21:50	22:00	22:10	22:20	22:30	22:40	22:50	23:00	23:10	23:20	23:30	23:40	23:50
測定値(μSv/h)	292.2	291.9	291.7	291.3	291.2	291.1	290.9	290.4	290.4	289.9	289.7	289.6	289.5	289.0	289.0	288.8	288.7	287.8	286.9
中性子	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D
風向	西北西	北西	北西	西	北西	北西	北西	北西	北西	西北西	北西	北西	北北西	北東	北西	北北西	北西	北西	北西
風速(m/s)	1.2	0.9	1.6	1.7	1.8	1.5	1.5	1.4	1.5	1.3	1.0	1.3	1.2	0.9	0.9	0.7	1.2	1.3	1.0

3月18日

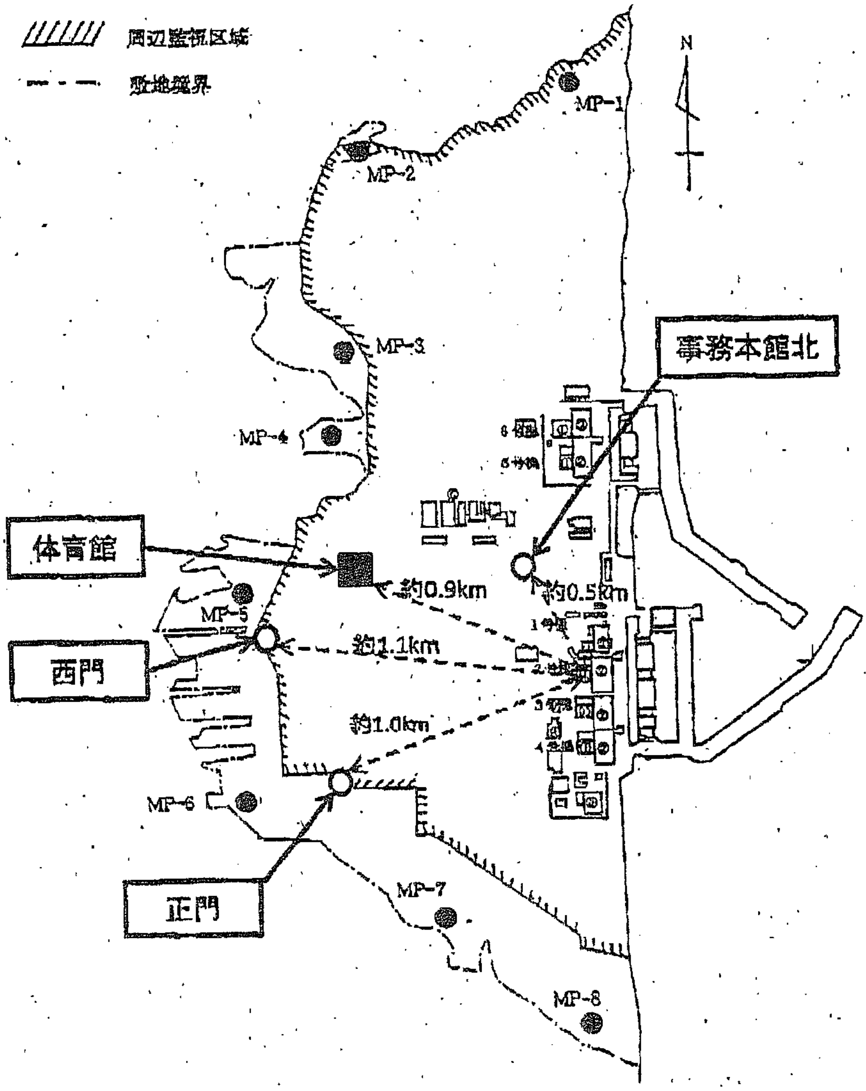
モニタリングカー	0:00	0:10	0:20	0:30	0:40	0:50	1:00	1:10	1:20	1:30	1:40	1:50	2:00	2:10	2:20	2:30	2:40	2:50	3:00	3:10	3:20	3:30
測定値(μSv/h)	287.0	287.3	286.6	286.4	286.3	286.0	285.6	285.5	285.2	284.9	284.6	284.4	284.0	283.7	283.7	283.5	283.0	282.9	282.6	282.2	282.1	281.6
中性子	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D
風向	西	西	西	西	北西	西北西	北西	北西	北西	北西	北	北西	北西	北東	北東	北東	北北東	北西	西	西北西	西北西	西
風速(m/s)	1.4	1.0	1.0	0.8	0.9	1.0	1.6	1.5	1.7	1.4	0.9	0.6	1.0	0.5	0.2	0.2	0.2	0.2	0.2	0.3	0.4	0.7

3月18日

モニタリングカー	3:40	3:50	4:00	4:10	4:20	4:30	4:40	4:50	5:00	5:10	5:20	5:30	5:40	5:50	6:00	6:10	6:20	6:30	6:40	6:50	7:00
測定値(μSv/h)	281.6	281.1	281.1	280.9	280.7	280.2	280.0	279.8	279.4	279.3	279.0	278.9	278.9	277.1	274.0	274.0	273.8	274.1	272.7	273.4	272.4
中性子	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D
風向	北西	東	西	西	北	北西	北	北東	北北東	北北西	北	北西	北西	北	北東	西	北	西	北西	西	西
風速(m/s)	0.6	0.4	0.5	0.5	0.4	0.2	0.8	0.5	0.5	0.6	0.5	0.7	1.0	1.0	1.3	1.6	1.4	1.2	1.6	1.6	2.3

福島第一原子力発電所

2011/3/17



福島第二(2F)(事業者のモニタリングポスト)

3月17日																						
モニタリングポスト	0:00	0:10	0:20	0:30	0:40	0:50	1:00	1:30	1:40	1:50	2:00	2:10	2:20	2:30	2:40	2:50	3:00	3:10	3:20	3:30	3:40	3:50
MP1(μSv/h)	25.0	24.9	24.9	24.8	24.7	24.8	24.7	24.6	24.5	24.4	24.3	24.4	24.3	24.2	24.2	24.2	24.1	24.1	24.0	24.0	24.0	23.8
MP2(μSv/h)	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中
MP3(μSv/h)	25.2	25.0	25.0	25.0	25.0	25.0	25.1	24.9	24.7	24.7	24.8	24.6	24.7	24.6	24.6	24.5	24.5	24.4	24.3	24.2	24.3	24.3
MP4(μSv/h)	17.4	17.4	17.4	17.4	17.4	17.3	17.3	17.2	17.2	17.2	17.2	17.2	17.2	17.2	17.2	17.2	17.2	17.1	17.1	17.1	17.1	17.0
MP5(μSv/h)	15.6	15.5	15.5	15.6	15.5	15.5	15.5	15.5	15.6	15.6	16.5	15.6	15.5	15.5	15.5	16.5	15.5	15.5	15.5	15.5	15.5	15.5
MP6(μSv/h)	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測
MP7(μSv/h)	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測
風向	西北西	西北西	北西	西	西北西	西	西北西	西北西	西北西	西北西	西北西	西	西	西北西	西	西	西	西	西	西	西	西
風速(m/s)	6.9	6.1	4.2	4.3	5.5	5.2	5.8	6.8	7.3	6.8	6.0	7.2	5.9	5.0	6.0	8.7	10.0	9.6	10.9	9.6	12.6	12.4

3月17日																						
モニタリングポスト	4:00	4:10	4:20	4:30	4:40	4:50	5:00	5:10	5:20	5:30	5:40	5:50	6:00	6:10	6:20	6:30	6:40	6:50	7:00	7:10	7:20	7:30
MP1(μSv/h)	23.9	23.8	23.7	23.6	23.6	23.6	23.5	23.6	23.6	23.6	23.5	23.5	23.5	23.5	23.5	23.4	23.4	23.4	23.3	23.3	23.3	23.3
MP2(μSv/h)	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中
MP3(μSv/h)	24.2	24.2	24.2	24.0	23.9	24.0	23.9	23.9	23.8	23.8	23.8	23.8	23.8	23.8	23.8	23.8	23.6	23.7	23.6	23.6	23.5	23.5
MP4(μSv/h)	17.0	17.0	16.9	16.9	16.8	16.8	16.8	16.7	16.7	16.6	16.7	16.6	16.6	16.6	16.6	16.5	16.5	16.5	16.5	16.5	16.5	16.5
MP5(μSv/h)	15.5	15.5	15.4	15.4	15.4	15.4	15.4	15.2	15.1	15.2	15.1	15.1	15.1	15.0	14.9	14.9	14.9	14.9	14.9	14.9	14.9	14.9
MP6(μSv/h)	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測
MP7(μSv/h)	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測
風向	西	西	西	西	西	西	西北西	西	西	西	西	西	西	西	西	西	西	西	西北西	西	西	西
風速(m/s)	11.4	12.3	11.7	11.3	12.6	8.7	9.5	9.4	8.6	10.5	11.7	10.8	11.0	10.5	11.2	15.2	12.8	13.1	13.0	16.1	17.2	16.9

3月17日																						
モニタリングポスト	7:40	7:50	8:00	8:10	8:20	8:30	8:40	8:50	9:00	9:10	9:20	9:30	9:40	9:50	10:00	10:10	10:20	10:30	10:40	10:50	11:00	11:10
MP1(μSv/h)	23.3	23.2	23.2	23.2	23.2	23.1	23.0	22.9	22.9	22.9	22.9	22.9	22.9	22.9	22.8	22.8	22.8	22.7	22.8	22.7	22.6	22.6
MP2(μSv/h)	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中
MP3(μSv/h)	23.5	23.5	23.5	23.5	23.4	23.4	23.5	23.4	23.3	23.4	23.4	23.2	23.2	23.1	23.2	23.1	23.1	23.1	23.1	23.1	23.1	23.1
MP4(μSv/h)	16.4	16.4	16.4	16.3	16.3	16.3	16.3	16.3	16.3	16.2	16.1	16.1	16.1	16.1	16.0	16.1	16.1	16.0	16.0	16.1	16.0	16.0
MP5(μSv/h)	14.8	14.8	14.8	14.8	14.7	14.7	14.7	14.7	14.7	14.7	14.7	14.7	14.6	14.6	14.6	14.6	14.6	14.6	14.5	14.5	14.5	14.5
MP6(μSv/h)	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測
MP7(μSv/h)	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測
風向	西	西	西	西	西	西	西	西	西	西	西	西	西	西	西	西	西	西	西	西	西	西
風速(m/s)	18.1	16.5	18.8	19.1	19.0	16.8	16.1	18.7	19.2	17.3	14.5	15.7	14.6	14.3	16.7	17.6	16.4	16.8	17.8	14.2	13.6	11.9

3月17日																						
モニタリングポスト	11:20	11:30	11:40	11:50	12:00	12:10	12:20	12:30	12:40	12:50	13:00	13:10	13:20	13:30	13:40	13:50	14:00	14:10	14:20	14:30	14:40	14:50
MP1(μSv/h)	22.4	22.5	22.6	22.5	22.4	22.4	22.3	22.4	22.4	22.2	22.2	22.2	22.2	22.2	22.1	22.0	22.2	22.1	22.2	22.1	22.1	22.0
MP2(μSv/h)	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中
MP3(μSv/h)	23.0	23.0	22.9	22.9	22.8	22.8	22.9	22.8	22.8	22.7	22.6	22.7	22.6	22.6	22.5	22.6	22.5	22.5	22.5	22.5	22.5	22.4
MP4(μSv/h)	16.0	15.9	15.9	15.9	15.9	15.9	15.9	15.7	15.8	15.8	15.8	15.8	15.7	15.7	15.7	15.7	15.7	15.6	15.6	15.6	15.5	15.6
MP5(μSv/h)	14.4	14.4	14.4	14.4	14.4	14.4	14.4	14.4	14.4	14.3	14.3	14.3	14.3	14.3	14.3	14.3	14.3	14.2	14.2	14.2	14.2	14.2
MP6(μSv/h)	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測
MP7(μSv/h)	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測
風向	西	西北西	北西	西	北西	西	西	西	西	西	西北西	西北西	西北西	西	北西	北西	北西	北西	北西	西	西	北西
風速(m/s)	11.6	7.9	7.9	7.9	6.0	9.2	11.2	9.2	8.2	8.7	9.1	7.5	8.8	7.3	8.5	6.4	8.7	9.2	8.1	8.0	7.4	3.2

受信時刻 3月18日 8時31分
出力時刻 3月18日 8時34分

3月17日

モニタリングポスト	15:00	15:10	15:20	15:30	15:40	15:50	16:00	16:10	16:20	16:30	16:40	16:50	17:00	17:10	17:20	17:30	17:40	17:50	18:00	18:10	18:20	18:30
MP1(μSv/h)	21.9	21.9	21.9	21.8	21.8	21.8	21.8	21.7	21.7	21.7	21.7	21.7	21.7	21.7	21.7	21.7	21.6	21.6	21.4	21.5	21.4	21.4
MP2(μSv/h)	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中
MP3(μSv/h)	22.5	22.4	22.4	22.4	22.4	22.4	22.4	22.3	22.3	22.3	22.2	22.1	22.2	22.1	22.0	22.0	22.0	22.0	21.9	22.0	21.9	22.0
MP4(μSv/h)	15.6	15.5	15.5	16.5	15.5	15.5	15.5	15.5	15.5	15.4	15.5	15.4	15.3	15.4	16.3	16.3	16.3	16.3	15.3	15.3	15.2	15.3
MP5(μSv/h)	14.2	14.2	14.2	13.5	13.6	14.2	14.1	14.1	14.1	14.1	14.1	14.2	14.1	14.1	14.0	14.1	14.0	14.0	14.0	14.0	14.0	14.0
MP6(μSv/h)	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測
MP7(μSv/h)	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測
風向	西	北西	西	西	西	西	西	北西	北西	北北西	西北西	西	西	西	西	西	西	西	西	西北西	西	西
風速(m/s)	5.3	3.6	6.3	6.9	8.4	9.2	7.8	4.6	2.5	4.2	3.7	2.0	5.0	10.6	11.2	14.5	12.3	11.4	13.9	14.2	13.6	12.1

3月17日

モニタリングポスト	18:40	18:50	19:00	19:10	19:20	19:30	19:40	19:50	20:00	20:10	20:20	20:30	20:40	20:50	21:00	21:10	21:20	21:30	21:40	21:50	22:00	22:10
MP1(μSv/h)	21.3	21.3	21.3	21.3	21.3	21.3	21.3	21.3	21.3	21.3	21.2	21.2	21.2	21.2	21.2	21.1	21.1	21.1	21.1	21.1	21.0	21.0
MP2(μSv/h)	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中
MP3(μSv/h)	21.9	21.9	21.9	21.9	21.9	21.7	21.8	21.8	21.8	21.6	21.6	21.6	21.7	21.7	21.6	21.5	21.6	21.6	21.5	21.5	21.5	21.5
MP4(μSv/h)	15.2	15.2	15.2	15.2	15.2	15.2	15.2	15.2	15.1	15.2	15.1	15.1	15.1	15.1	15.1	15.1	15.1	15.1	15.1	15.1	15.1	15.0
MP5(μSv/h)	14.0	14.0	14.0	13.9	14.0	13.9	13.9	13.9	13.8	13.9	13.8	13.8	13.8	13.8	13.8	13.7	13.7	13.7	13.7	13.7	13.6	13.6
MP6(μSv/h)	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測
MP7(μSv/h)	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測
風向	西		西北西	西	西	西	西北西	西	北西	西北西	西北西	西北西	北北西	北	西北西	西	北西	北東	北西	北西	北西	西北西
風速(m/s)	11.0	9.5	9.2	11.4	10.3	9.5	8.7	8.1	6.2	6.7	5.2	4.1	2.6	5.1	4.0	3.9	1.5	0.9	2.6	3.1	3.7	2.8

3月17日

モニタリングポスト	22:20	22:30	22:40	22:50	23:00	23:10	23:20	23:30	23:40	23:50
MP1(μSv/h)	21.1	21.0	21.0	21.0	20.9	21.0	20.9	20.8	20.8	20.8
MP2(μSv/h)	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中
MP3(μSv/h)	21.5	21.5	21.5	21.4	21.4	21.4	21.4	21.4	21.3	21.3
MP4(μSv/h)	15.1	15.0	15.0	14.9	15.0	14.9	14.9	14.9	14.9	14.8
MP5(μSv/h)	13.6	13.5	13.6	13.5	13.4	13.4	13.4	13.4	13.4	13.4
MP6(μSv/h)	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測
MP7(μSv/h)	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測
風向	北西	北西	西北西	北西	西北西	西	西	西	西	西
風速(m/s)	2.6	2.3	1.7	2.8	6.7	6.9	8.7	8.3	7.2	5.0

3月18日 モニタリングポスト	0:00	0:10	0:20	0:30	0:40	0:50	1:00	1:10	1:20	1:30	1:40	1:50	2:00	2:10	2:20	2:30	2:40	2:50	3:00	3:10	3:20	3:30
MP1(μSv/h)	20.8	20.8	20.7	20.7	20.7	20.7	20.7	20.7	20.6	20.6	20.6	20.6	20.6	20.7	20.5	20.5	20.5	20.6	20.4	20.5	20.4	20.4
MP2(μSv/h)	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中
MP3(μSv/h)	21.3	21.3	21.3	21.3	21.2	21.1	21.0	21.1	21.1	21.1	21.0	21.0	20.9	21.0	20.9	20.9	20.9	20.9	20.9	20.9	20.9	20.9
MP4(μSv/h)	14.8	14.8	14.8	14.8	14.7	14.7	14.7	14.6	14.6	14.7	14.6	14.6	14.6	14.6	14.6	14.6	14.6	14.6	14.6	14.5	14.6	14.6
MP5(μSv/h)	13.4	13.4	13.4	13.4	13.4	13.4	13.4	13.4	13.4	13.4	13.4	13.4	13.4	13.4	13.4	13.4	13.4	13.4	13.4	13.4	13.4	13.4
MP6(μSv/h)	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測
MP7(μSv/h)	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測
風向	西北西	西北西	西	西	西	西北西	北西	北西	北西	北西	北西	北西	北西	西北西	北西	北西	北北西	北北西	北	北	北	北西
風速(m/s)	5.2	8.1	8.0	7.7	6.8	7.8	7.3	6.1	5.6	6.4	6.5	6.7	7.7	7.2	6.0	5.2	5.1	2.3	3.4	3.9	3.9	3.8

3月18日 モニタリングポスト	3:40	3:50	4:00	4:10	4:20	4:30	4:40	4:50	5:00	5:10	5:20	5:30	5:40	6:50	6:00	6:10	6:20	6:30	6:40	6:50	7:00
MP1(μSv/h)	20.3	20.3	20.4	20.3	20.3	20.3	20.3	20.2	20.3	20.2	20.2	20.2	20.2	20.2	20.2	20.2	20.1	20.1	20.1	20.1	20.9
MP2(μSv/h)	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中
MP3(μSv/h)	20.9	20.9	20.8	20.8	20.8	20.8	20.8	20.7	20.7	20.7	20.5	20.5	20.6	20.5	20.5	20.5	20.5	20.5	20.4	20.4	20.4
MP4(μSv/h)	14.6	14.6	14.5	14.5	14.5	14.5	14.5	14.4	14.5	14.5	14.4	14.5	14.4	14.3	14.3	14.3	14.3	14.3	14.3	14.2	14.2
MP5(μSv/h)	13.4	13.4	13.4	13.4	13.4	13.4	13.4	13.4	13.4	13.4	13.4	13.4	13.3	13.3	13.0	13.0	12.9	12.8	12.6	12.7	12.5
MP6(μSv/h)	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測
MP7(μSv/h)	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測
風向	北北西	北西	北西	北西	北北西	北	北	北	北	北	北	北	北	北西	西	北北西	北北西	西北西	北西	北西	北西
風速(m/s)	3.0	3.1	2.8	2.6	4.2	5.4	5.0	4.5	2.9	3.0	3.4	2.0	1.8	1.1	1.4	2.8	3.6	2.8	5.9	6.6	5.8

① ERC 放射線班
② 県災対本部原子力班　御中

OFC 放射線班　佐々木

各班 ← ERC 放射線班

紅葉山局モニタリングポスト（県測定）NaI 線量率

	(nGy/h)		
3/17(木)		3/17	
17:30	13,000	23:30	12,000
18:00	13,000	3/18 0:00	12,000
18:30	13,000	0:30	12,000
19:00	13,000	1:00	12,000
19:30	13,000	1:30	12,000
20:00	13,000	2:00	12,000
20:30	13,000	2:30	12,000
21:00	13,000	3:00	12,000
21:30	13,000	3:30	12,000
22:00	13,000	4:00	12,000
22:30	13,000	4:30	12,000
23:00	13,000		

紅葉山局モニタリングポスト

3/18(金)	(nGy/h)
5:00	12,000
5:30	12,000
6:00	12,000
6:30	12,000
7:00	12,000

180754
リ → 幹部、2F

From: (b)(6)
To:

Subject: Translation of new Fukushima Plant monitoring data
Date: Thursday, March 17, 2011 5:36:18 PM
Attachments: Fukushima Monitoring Data.pdf

Attached please find a translated version of the new part of the Fukushima monitoring data dated 3/18 at 4:42. This is the final page of the document, which shows the "new" data.

SBU
This email is UNCLASSIFIED

Naomi Walcott
Emergency Action Officer
Japan Emergency Command Center
U.S. Embassy Tokyo

-----Original Message-----
From: JapanEmbassy, TaskForce
Sent: Friday, March 18, 2011 5:09 AM
(b)(6)
Subject: Fukushima Plant monitoring data

Please find attached monitoring data from Fukushima areas, dated 03/18 at 4:42 AM.

Naomi Walcott
Emergency Action Officer
Japan Emergency Command Center
U.S. Embassy Tokyo

-----Original Message-----
From: SAKAMOTO KENICHI [mailto:kenichi.sakamoto-2@mofa.go.jp]
Sent: Friday, March 18, 2011 4:48 AM
(b)(6)
Subject: monitoring data (latest version)

Huntington-san,

000308

This is the latest monitoring data.

Thank you,

Kenichi SAKAMOTO

外務省北米局日米 位 定室 課 補佐
Deputy Director, Status of U.S. Forces Agreement Division, North American Affairs Bureau, Ministry of Foreign Affairs
坂本 賢一
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TEL:+81-3-5501-8000 (ex)5362
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MAIL:kenichi.sakamoto-2@mofa.go.jp

SBU
This email is UNCLASSIFIED

3月18日											
モニタリングポスト	0:00	0:10	0:20	0:30	0:40	0:50	1:00	1:10	1:20	1:30	1:40
MP1(μSv/h)	20.8	20.8	20.7	20.7	20.7	20.7	20.7	20.7	20.6	20.6	20.6
MP2(μSv/h)	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中
MP3(μSv/h)	21.3	21.3	21.3	21.3	21.2	21.1	21.0	21.1	21.1	21.1	21.0
MP4(μSv/h)	14.8	14.8	14.8	14.8	14.7	14.7	14.7	14.6	14.6	14.7	14.6
MP5(μSv/h)	13.4	13.4	13.4	13.4	13.4	13.4	13.4	13.4	13.4	13.4	13.4
MP6(μSv/h)	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測
MP7(μSv/h)	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測
風向	西北西	西北西	西	西	西	西北西	北西	北西	北西	北西	北西
風速(m/s)	5.2	8.1	8.0	7.7	6.6	7.0	7.3	6.1	5.6	6.4	6.5

モニタリングポスト	1:50	2:00	2:10	2:20	2:30	2:40	2:50	3:00	3:10	3:20	3:30
MP1(μSv/h)	20.6	20.6	20.7	20.5	20.5	20.5	20.5	20.4	20.5	20.4	20.4
MP2(μSv/h)	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中
MP3(μSv/h)	21.0	20.9	21.0	20.9	20.9	20.9	20.9	20.9	20.9	20.9	20.9
MP4(μSv/h)	14.6	14.6	14.6	14.6	14.6	14.6	14.6	14.6	14.5	14.6	14.6
MP5(μSv/h)	13.4	13.4	13.4	13.4	13.4	13.4	13.4	13.4	13.4	13.4	13.4
MP6(μSv/h)	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測
MP7(μSv/h)	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測
風向	北西	北西	西北西	北西	北西	北北西	北北西	北	北	北	北西
風速(m/s)	6.7	7.7	7.2	6.0	5.2	5.1	2.3	3.4	3.9	3.9	3.1

Monitoring Post

Wind Direction

wind speed

"This whole row say "being checked""

WNW NW NW NNW

NEW

NNW N N N NW

These two rows all say "missing data"

受信時刻 3月18日 4時51分 ページ7

出力時刻 3月18日 4時53分

'11年03月18日(金) 04時43分 宛先:0550182831

発信: 危機管理センター L4

R:861 P.07/07

From: JapanEmbassy, TaskForce
To: (b)(6)

Subject: Fukushima Plant monitoring data
Date: Thursday, March 17, 2011 4:11:38 PM
Attachments: monitoringdata1103180442.pdf

Please find attached monitoring data from Fukushima areas, dated 03/18 at 4:42 AM.

Naomi Walcott
Emergency Action Officer
Japan Emergency Command Center
U.S. Embassy Tokyo

-----Original Message-----
From: SAKAMOTO KENICHI [mailto:kenichi.sakamoto-2@mofa.go.jp]
Sent: Friday, March 18, 2011 4:48 AM
(b)(6)

Subject: monitoring data (latest version)

Huntington-san,

This is the latest monitoring data.

Thank you,

Kenichi SAKAMOTO

外務省北米局日米 位 定室 課 補佐
Deputy Director, Status of U.S. Forces Agreement Division, North American Affairs Bureau, Ministry of Foreign Affairs
坂本 賢一
Kenichi SAKAMOTO
TEL:+81-3-5501-8000 (ex)5362
DIRECT:+81-3-5501-8282
FAX:+81-3-5501-8281
MAIL:kenichi.sakamoto-2@mofa.go.jp

SBU
This email is UNCLASSIFIED

000|309

2011/3/18 3:58
※太枠箇所が更新箇所

福島第一(1F) 西門付近(MP-6付近)(2号機より西約1.1キロ) ※MP-8の放射線によるリスクが高いことから西門付近で測定

3月17日															
モニタリングカー	0:30	0:50	1:30	2:00	2:30	3:00	3:30	4:00	4:30	5:00	5:30	6:00	6:30	7:00	7:30
測定値(μSv/h)	351.4	350.1	348.2	345.9	344.8	344.6	341.7	340.8	339.4	338.3	336.1	334.7	333.8	314.6	313.5
中性子	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
風向	北東	南南西	東	西	北西	北	西	西	北西	西	西	西	西	西	西
風速(m/s)	1.1	0.4	0.9	0.5	1.5	1.5	1.8	1.8	1.0	1.3	2.3	3.1	3.6	3.7	3.8

福島第一(1F) 体育館付近(MP-5東側)(2号機より西北西約0.9キロ) ※高圧注水活動の作業者のための放射線管理を行うため移動

3月17日							
モニタリングカー	7:50	8:00	8:30	8:40	8:50	9:00	9:10
測定値(μSv/h)	381.9	379.0	373.0	372.5	372.7	373.7	871.9
中性子	ND	ND	ND	ND	ND	ND	ND
風向	西	南西	西南西	南西	南西	南西	南西
風速(m/s)	3.7	3.7	3.2	3.8	3.4	3.7	3.0

福島第一(1F) 事務本館北(2号機より北西約0.5キロ) ※注水活動による効果を測定するためにより近傍へ移動

3月17日									
モニタリングカー	9:30	9:40	9:50	10:00	10:10	10:20	10:30	10:40	10:50
測定値(μSv/h)	3786.0	3782.0	3763.0	3759.0	3755.0	3764.0	3750.0	3753.0	3743.0
中性子	ND	ND	ND	ND	ND	ND	ND	ND	ND
風向	西	西南西	西	北西	北西	西	西	西南西	南西
風速(m/s)	6.1	5.0	8.8	5.2	5.6	6.2	7.0	4.6	2.2

福島第一(1F) 正門付近前(MP-6付近)(2号機より西南西約1.0キロ) ※入構者のための放射線管理を行うため移動

3月17日		
モニタリングカー	11:00	11:10
測定値(μSv/h)	647.3	646.2
中性子	ND	ND
風向	北西	北北西
風速(m/s)	4.8	2.3

福島第一(1F) 西門(MP-6付近)(2号機より西約1.1キロ) ※定点で測定するため移動

3月17日								
モニタリングカー	11:16	11:20	11:30	12:00	12:30	13:00	13:10	13:20
測定値(μSv/h)	313.1	312.6	312.3	311.0	310.7	309.7	309.3	309.1
中性子	ND	ND	ND	ND	ND	ND	ND	ND
風向	北西	西	西北西	西	西	西	西	西
風速(m/s)	4.7	4.4	2.9	3.5	3.5	3.8	3.5	3.1

福島第一(1F) 事務本館北(2号機より北西約0.5キロ) ※注水活動による効果を測定するためにより近傍へ移動

3月17日			
モニタリングカー	13:30	13:40	14:00
測定値(μSv/h)	4175.0	4165.0	3910.0
中性子	ND	ND	ND
風向	北西	西	西
風速(m/s)	4.6	4.7	6.2

経済産業省
番号 1804.11

2枚目、6枚目に新情報

受信時刻 3月18日 4時51分

出力時刻 3月18日 4時53分

発信: 危機管理センター L4

2011/3/18 3:58
※太枠箇所が更新箇所

福島第一(1F) 西門(MP-5付近)(2号機より西約1.1キロ) ※定点で測定するため移動

3月17日

モニタリングカー	14:10	14:30	15:00	15:30
測定値(μSv/h)	311.1	310.3	309.1	309.7
中性子	N.D	N.D	N.D	N.D
風向	北西	西	西	西
風速(m/s)	6.8	3.5	3.2	3.1

福島第一(1F) 事務本館北(2号機より北西約0.5キロ) ※注水活動による効果を測定するためにより近傍へ移動

3月17日

モニタリングカー	15:50	15:55	16:00	16:05	16:10	16:15	17:00	17:05	17:10	17:15	17:20	17:25	17:30	17:35	17:40	17:45	17:50	17:55	18:00	18:05	18:10	18:15	18:20
測定値(μSv/h)	3700.0	3699.0	3698.0	3695.0	3695.0	3691.0	3676.0	3676.0	3675.0	3675.0	3672.0	3670.0	3667.0	3665.0	3639.0	3663.0	3650.0	3649.0	3649.0	3645.0	3641.0	3641.0	3545.0
中性子	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D
風向	西	西	西	西	西	西	西	北西	北西	北西	北西	西	北西	北西	西北西	西	西	西	西北西	西	北西	西	西
風速(m/s)	6.2	4.7	4.3	4.1	4.3	4.1	3.1	3.3	2.8	2.7	3.3	3.2	3.4	3.7	3.6	3.3	2.7	2.4	2.1	2.2	2.4	2.4	2.6

3月17日

モニタリングカー	18:25	18:30	18:35	18:40	18:50	19:00	19:10	19:20	19:50	20:00	20:10
測定値(μSv/h)	3643.0	3643.0	3637.0	3638.0	3638.0	3630.0	3626.0	3623.0	3599.0	3601.0	3585.0
中性子	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D
風向	西	西北西	北西	北西	西北西	西南西	西北西	西	北西	北東	西北西
風速(m/s)	2.8	2.7	2.7	2.9	2.4	2.7	2.7	2.3	4.8	1.5	1.4

福島第一(1F) 西門(MP-5付近)(2号機より西約1.1キロ) ※放水が終了し、定点で測定するため移動

3月17日

モニタリングカー	20:40	21:00	21:10	21:20	21:30	21:40	21:50	22:00	22:10	22:20	22:30	22:40	22:50	23:00	23:10	23:20	23:30	23:40	23:50
測定値(μSv/h)	292.2	291.9	291.7	291.3	291.2	291.1	290.9	290.4	290.4	289.9	289.7	289.6	289.5	289.0	289.0	288.8	288.7	287.8	288.9
中性子	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D
風向	西北西	北西	北西	西	北西	北西	北西	北西	北西	西北西	北西	北西	北北西	北東	北西	北北西	北西	北西	北西
風速(m/s)	1.2	0.9	1.6	1.7	1.3	1.5	1.5	1.4	1.5	1.3	1.0	1.3	1.2	0.9	0.9	0.7	1.2	1.3	1.0

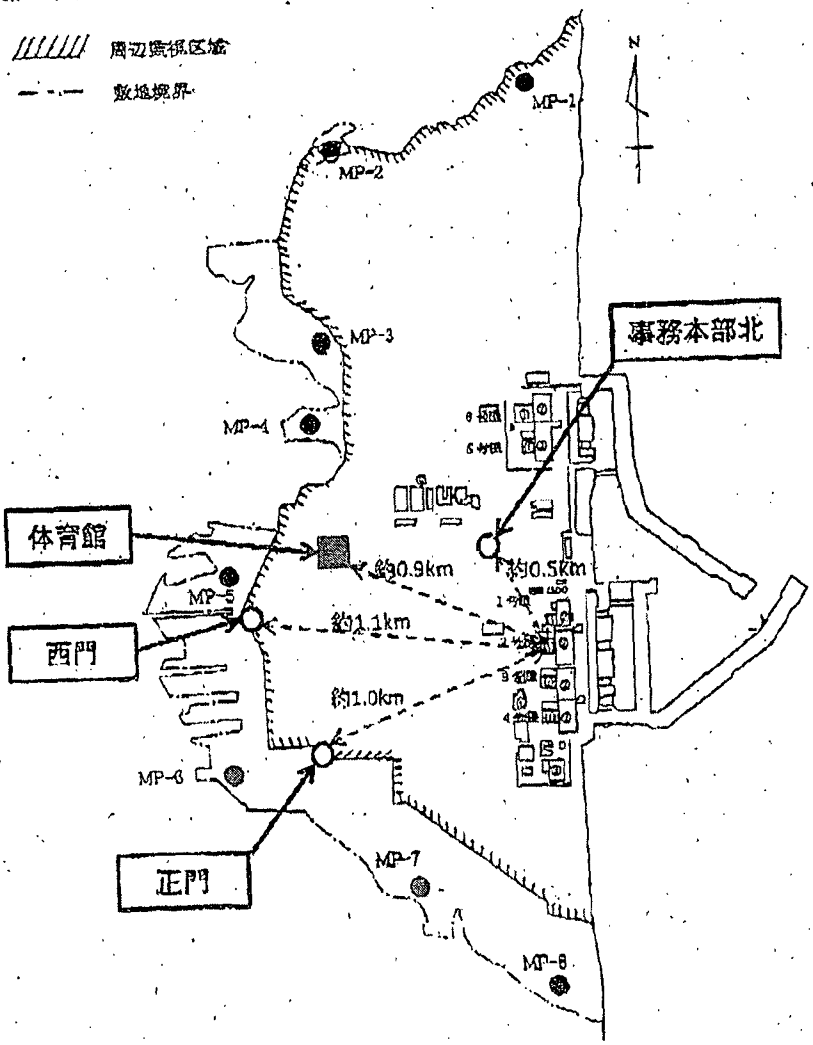
3月18日

モニタリングカー	0:00	0:10	0:20	0:30	0:40	0:50	1:00	1:10	1:20	1:30	1:40	1:50	2:00	2:10	2:20	2:30	2:40	2:50	3:00	3:10	3:20	3:30
測定値(μSv/h)	287.0	287.3	286.6	286.4	286.3	286.0	285.6	285.5	285.2	284.9	284.6	284.4	284.0	283.7	283.7	283.5	283.0	282.9	282.6	282.2	282.1	281.6
中性子	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D
風向	西	西	西	西	北西	西北西	北西	北西	北西	北西	北	北西	北西	北東	北東	北東	北北東	北西	西	西北西	西北西	西
風速(m/s)	1.4	1.0	1.0	0.8	0.9	1.0	1.6	1.5	1.7	1.4	0.9	0.6	1.0	0.5	0.2	0.2	0.2	0.2	0.2	0.3	0.4	0.7

NEW

2011/3/17

福島第一原子力発電所



2011/3/18 3:58

福島第二(2F)(事業者のモニタリングポスト)

3月17日																						
モニタリングポスト	0:00	0:10	0:20	0:30	0:40	0:50	1:00	1:30	1:40	1:50	2:00	2:10	2:20	2:30	2:40	2:50	3:00	3:10	3:20	3:30	3:40	3:50
MP1(μSv/h)	25.0	24.9	24.9	24.8	24.7	24.8	24.7	24.6	24.5	24.4	24.3	24.4	24.3	24.2	24.2	24.2	24.1	24.1	24.0	24.0	24.0	23.8
MP2(μSv/h)	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中
MP3(μSv/h)	25.2	25.0	25.0	25.0	25.0	25.0	25.1	24.9	24.7	24.7	24.8	24.6	24.7	24.5	24.6	24.5	24.5	24.4	24.3	24.2	24.3	24.8
MP4(μSv/h)	17.4	17.4	17.4	17.4	17.4	17.3	17.3	17.2	17.2	17.2	17.2	17.2	17.2	17.2	17.2	17.2	17.2	17.1	17.1	17.1	17.1	17.0
MP5(μSv/h)	15.6	15.5	15.5	15.6	15.5	15.5	15.6	15.5	15.5	15.5	15.5	15.6	15.5	15.5	16.5	15.5	15.5	15.5	15.5	15.5	15.5	15.5
MP6(μSv/h)	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測
MP7(μSv/h)	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測
風向	西北西	西北西	北西	西	西北西	西	西北西	西北西	西北西	西北西	西北西	西	西	西北西	西	西	西	西	西	西	西	西
風速(m/s)	6.9	6.1	4.2	4.3	5.5	5.2	5.8	6.8	7.3	6.8	6.0	7.2	5.9	5.0	6.0	8.7	10.0	9.6	10.9	9.6	12.6	12.4

3月17日																						
モニタリングポスト	4:00	4:10	4:20	4:30	4:40	4:50	5:00	5:10	5:20	5:30	5:40	5:50	6:00	6:10	6:20	6:30	6:40	6:50	7:00	7:10	7:20	7:30
MP1(μSv/h)	23.9	23.8	23.7	23.6	23.6	23.6	23.5	23.6	23.6	23.6	23.5	23.5	23.5	23.5	23.5	23.4	23.4	23.4	23.3	23.3	23.3	23.3
MP2(μSv/h)	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中
MP3(μSv/h)	24.2	24.2	24.2	24.0	23.9	24.0	23.9	23.9	23.8	23.8	23.8	23.8	23.8	23.8	23.8	23.8	23.6	23.7	23.6	23.6	23.5	23.5
MP4(μSv/h)	17.0	17.0	16.9	16.9	16.8	16.8	16.8	16.7	16.7	16.6	16.7	16.6	16.6	16.6	16.6	16.5	16.5	16.5	16.5	16.5	16.5	16.5
MP5(μSv/h)	15.5	15.5	15.4	15.4	15.4	15.4	15.4	15.2	15.1	15.2	15.1	15.1	15.1	15.0	14.9	14.9	14.9	14.9	14.9	14.9	14.9	14.9
MP6(μSv/h)	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測
MP7(μSv/h)	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測
風向	西	西	西	西	西	西	西北西	西	西	西	西	西	西	西	西	西	西	西	西北西	西	西	西
風速(m/s)	11.4	12.3	11.7	11.3	12.6	8.7	9.5	9.4	8.6	10.5	11.7	10.8	11.0	10.5	11.2	15.2	12.8	13.1	13.0	16.1	17.2	16.9

3月17日																						
モニタリングポスト	7:40	7:50	8:00	8:10	8:20	8:30	8:40	8:50	9:00	9:10	9:20	9:30	9:40	9:50	10:00	10:10	10:20	10:30	10:40	10:50	11:00	11:10
MP1(μSv/h)	23.3	23.2	23.2	23.2	23.2	23.1	23.0	22.9	22.9	22.9	22.9	22.9	22.9	22.9	22.8	22.8	22.8	22.7	22.8	22.7	22.6	22.6
MP2(μSv/h)	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中
MP3(μSv/h)	23.5	23.5	23.6	23.5	23.4	23.4	23.5	23.4	23.3	23.4	23.4	23.2	23.2	23.1	23.2	23.1	23.1	23.1	23.1	23.1	23.1	23.1
MP4(μSv/h)	16.4	16.4	16.4	16.3	16.3	16.3	16.3	16.3	16.3	16.2	16.1	16.1	16.1	16.1	16.0	16.1	16.1	16.0	16.0	16.1	16.0	16.0
MP5(μSv/h)	14.8	14.8	14.8	14.8	14.7	14.7	14.7	14.7	14.7	14.7	14.7	14.7	14.6	14.6	14.6	14.5	14.6	14.6	14.5	14.5	14.5	14.5
MP6(μSv/h)	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測
MP7(μSv/h)	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測
風向	西	西	西	西	西	西	西	西	西	西	西	西	西	西	西	西	西	西	西	西	西	西
風速(m/s)	18.1	16.5	18.8	19.1	19.0	16.8	16.1	16.7	19.2	17.3	14.6	15.7	14.6	14.3	16.7	17.6	16.4	16.8	17.8	14.2	13.6	11.9

3月17日																						
モニタリングポスト	11:20	11:30	11:40	11:50	12:00	12:10	12:20	12:30	12:40	12:50	13:00	13:10	13:20	13:30	13:40	13:50	14:00	14:10	14:20	14:30	14:40	14:50
MP1(μSv/h)	22.4	22.5	22.5	22.5	22.4	22.4	22.3	22.4	22.4	22.2	22.2	22.2	22.2	22.2	22.1	22.0	22.2	22.1	22.2	22.1	22.1	22.0
MP2(μSv/h)	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中
MP3(μSv/h)	23.0	23.0	22.9	22.9	22.8	22.8	22.9	22.8	22.8	22.7	22.6	22.7	22.6	22.6	22.5	22.6	22.5	22.5	22.5	22.5	22.5	22.4
MP4(μSv/h)	16.0	15.9	15.9	15.9	15.9	15.9	15.9	15.7	15.8	15.8	15.8	15.8	15.7	15.7	15.7	15.7	15.7	15.6	15.6	15.6	15.5	15.6
MP5(μSv/h)	14.4	14.4	14.4	14.4	14.4	14.4	14.4	14.4	14.4	14.3	14.3	14.3	14.3	14.3	14.3	14.3	14.3	14.2	14.2	14.2	14.2	14.2
MP6(μSv/h)	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測
MP7(μSv/h)	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測
風向	西	西北西	北西	西	北西	西	西	西	西	西	西北西	西北西	西北西	西	北西	北西	北西	北西	北西	西	西	北西
風速(m/s)	11.6	7.9	7.9	7.9	6.0	9.2	11.2	9.2	8.2	8.7	9.1	7.5	8.8	7.3	8.5	8.4	8.7	9.2	8.1	8.0	7.4	3.2

3月17日																						
モニタリングポスト	15:00	15:10	15:20	15:30	15:40	15:50	16:00	16:10	16:20	16:30	16:40	16:50	17:00	17:10	17:20	17:30	17:40	17:50	18:00	18:10	18:20	18:30
MP1(μSv/h)	21.9	21.9	21.9	21.8	21.8	21.8	21.8	21.7	21.7	21.7	21.7	21.7	21.7	21.7	21.7	21.7	21.6	21.6	21.4	21.5	21.4	21.4
MP2(μSv/h)	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中
MP3(μSv/h)	22.5	22.4	22.4	22.4	22.4	22.4	22.4	22.3	22.3	22.3	22.2	22.1	22.2	22.1	22.0	22.0	22.0	22.0	21.9	22.0	21.9	22.0
MP4(μSv/h)	15.5	15.5	15.5	15.5	15.5	15.5	15.5	15.5	15.5	15.4	15.5	15.4	15.3	15.4	15.3	15.3	15.3	15.3	15.3	15.3	15.2	15.3
MP5(μSv/h)	14.2	14.2	14.2	13.5	13.6	14.2	14.1	14.1	14.1	14.1	14.1	14.2	14.1	14.1	14.0	14.1	14.0	14.0	14.0	14.0	14.0	14.0
MP6(μSv/h)	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測
MP7(μSv/h)	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測
風向	西	北西	西	西	西	西	西	北西	北西	北北西	西北西	西	西	西	西	西	西	西	西	西北西	西	西
風速(m/s)	5.3	3.6	6.3	6.9	8.4	9.2	7.8	4.6	2.5	4.2	3.7	2.0	5.0	10.6	11.2	14.5	12.3	11.4	13.9	14.2	13.6	12.1

3月17日																						
モニタリングポスト	18:40	18:50	19:00	19:10	19:20	19:30	19:40	19:50	20:00	20:10	20:20	20:30	20:40	20:50	21:00	21:10	21:20	21:30	21:40	21:50	22:00	22:10
MP1(μSv/h)	21.3	21.3	21.3	21.3	21.3	21.3	21.3	21.3	21.3	21.3	21.2	21.2	21.2	21.2	21.2	21.1	21.1	21.1	21.1	21.1	21.0	21.0
MP2(μSv/h)	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中
MP3(μSv/h)	21.9	21.9	21.9	21.9	21.9	21.7	21.8	21.8	21.8	21.6	21.6	21.6	21.7	21.7	21.6	21.5	21.6	21.6	21.5	21.5	21.5	21.5
MP4(μSv/h)	15.2	15.2	15.2	15.2	15.2	15.2	15.2	15.2	15.1	15.2	15.1	15.1	15.1	15.1	15.1	15.1	15.1	15.1	15.1	15.1	15.1	15.0
MP5(μSv/h)	14.0	14.0	14.0	13.9	14.0	13.9	13.9	13.9	13.8	13.9	13.8	13.8	13.8	13.8	13.8	13.7	13.7	13.7	13.7	13.7	13.6	13.6
MP6(μSv/h)	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測
MP7(μSv/h)	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測
風向	西		西北西	西	西	西	西北西	西	北西	西北西	西北西	西北西	北北西	北	西北西	西	北西	北東	北西	北西	北西	西北西
風速(m/s)	11.0	9.5	9.2	11.4	10.3	9.5	8.7	8.1	6.2	5.7	5.2	4.1	2.6	5.1	4.0	3.9	1.5	0.9	2.6	3.1	3.7	2.3

3月17日										
モニタリングポスト	22:20	22:30	22:40	22:50	23:00	23:10	23:20	23:30	23:40	23:50
MP1(μSv/h)	21.1	21.0	21.0	21.0	20.9	21.0	20.9	20.8	20.8	20.8
MP2(μSv/h)	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中
MP3(μSv/h)	21.5	21.5	21.5	21.4	21.4	21.4	21.4	21.4	21.3	21.3
MP4(μSv/h)	15.1	15.0	15.0	14.9	15.0	14.9	14.9	14.9	14.9	14.8
MP5(μSv/h)	13.6	13.5	13.6	13.5	13.4	13.4	13.4	13.4	13.4	13.4
MP6(μSv/h)	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測
MP7(μSv/h)	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測
風向	北西	北西	西北西	北西	西北西	西	西	西	西	西
風速(m/s)	2.6	2.3	1.7	2.8	6.7	6.9	8.7	8.3	7.2	5.0

2011/3/18 3:58

3月18日												
モニタリングポスト	0:00	0:10	0:20	0:30	0:40	0:50	1:00	1:10	1:20	1:30	1:40	1:50
MP1(μSv/h)	20.8	20.8	20.7	20.7	20.7	20.7	20.7	20.7	20.6	20.6	20.6	20.6
MP2(μSv/h)	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中
MP3(μSv/h)	21.3	21.3	21.3	21.3	21.2	21.1	21.0	21.1	21.1	21.1	21.0	21.0
MP4(μSv/h)	14.8	14.8	14.6	14.8	14.7	14.7	14.7	14.5	14.6	14.7	14.6	14.6
MP5(μSv/h)	13.4	13.4	13.4	13.4	13.4	13.4	13.4	13.4	13.4	13.4	13.4	13.4
MP6(μSv/h)	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測
MP7(μSv/h)	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測
風向	西北西	西北西	西	西	西	西北西	北西	北西	北西	北西	北西	北西
風速(m/s)	5.2	8.1	8.0	7.7	6.8	7.0	7.3	6.1	5.6	6.4	6.5	6.7

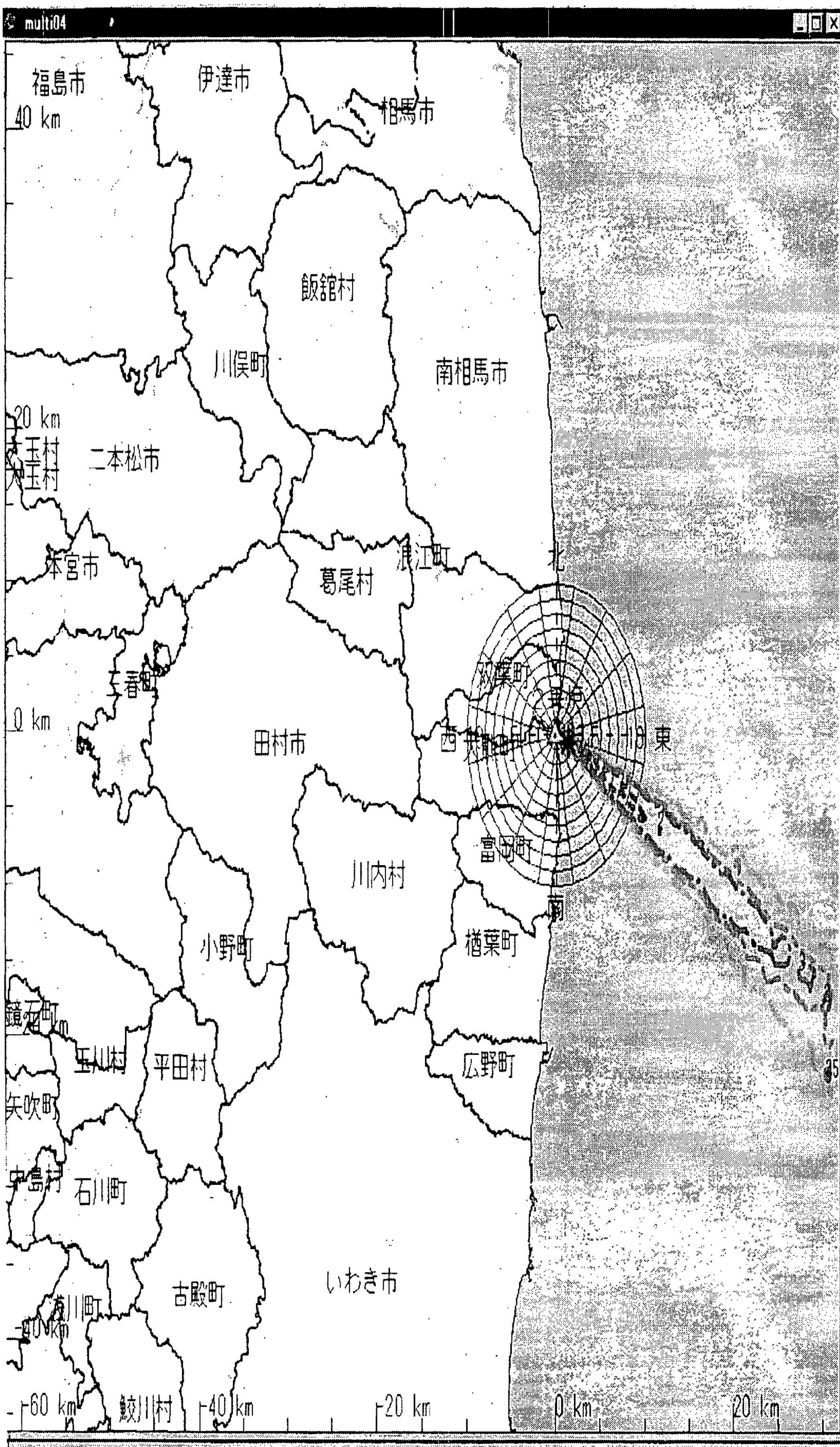
モニタリングポスト	2:00	2:10	2:20	2:30	2:40	2:50	3:00	3:10	3:20	3:30
MP1(μSv/h)	20.6	20.7	20.5	20.5	20.5	20.5	20.4	20.5	20.4	20.4
MP2(μSv/h)	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中
MP3(μSv/h)	20.9	21.0	20.9	20.9	20.9	20.9	20.9	20.9	20.9	20.9
MP4(μSv/h)	14.6	14.6	14.6	14.6	14.6	14.6	14.6	14.5	14.6	14.6
MP5(μSv/h)	13.4	13.4	13.4	13.4	13.4	13.4	13.4	13.4	13.4	13.4
MP6(μSv/h)	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測
MP7(μSv/h)	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測
風向	北西	西北西	北西	北西	北北西	北北西	北	北	北	北西
風速(m/s)	7.7	7.2	6.0	5.2	5.1	2.3	3.4	3.9	3.9	3.1

NEW

From: Trapp, James
To: Nakanishi, Tony
Subject: Fw: 18時SPEEDI単位量放出図形イメージの送付
Date: Thursday, March 17, 2011 5:45:12 AM
Attachments: FUKUSHIMA1 air doseüi19-20hüj.gif
FUKUSHIMA1 air doseüi20-21hüj.gif
FUKUSHIMA1 air doseüi18-19hüj.gif
FUKUSHIMA1 air concentrationüi19-20hüj.gif
FUKUSHIMA1 air concentrationüi18-19hüj.gif
FUKUSHIMA1 air concentrationüi20-21hüj.gif
FUKUSHIMA1 wind(18hüj.gif

----- Original Message -----
From: JapanEmbassy, TaskForce <JapanEmbassyTaskForce@state.gov>
(b)(6)
Sent: Thu Mar 17 05:29:03 2011
Subject: FW: 18時SPEEDI単位量放出図形イメージの送付

000310



計算結果表示3

空気吸収線量率

空気吸収線量率

日時＝ 2011/03/17 19:00 -
2011/03/17 20:00
気象データ＝ ＧＰＶ＋観測値
(2011/03/17 18:00) まで

福島第１　２号炉　広域図
放出地点　　: 141°02'08" - 37°25'18"
領域　　　　: 92km X 92km
核種名　　＝ 希ガス

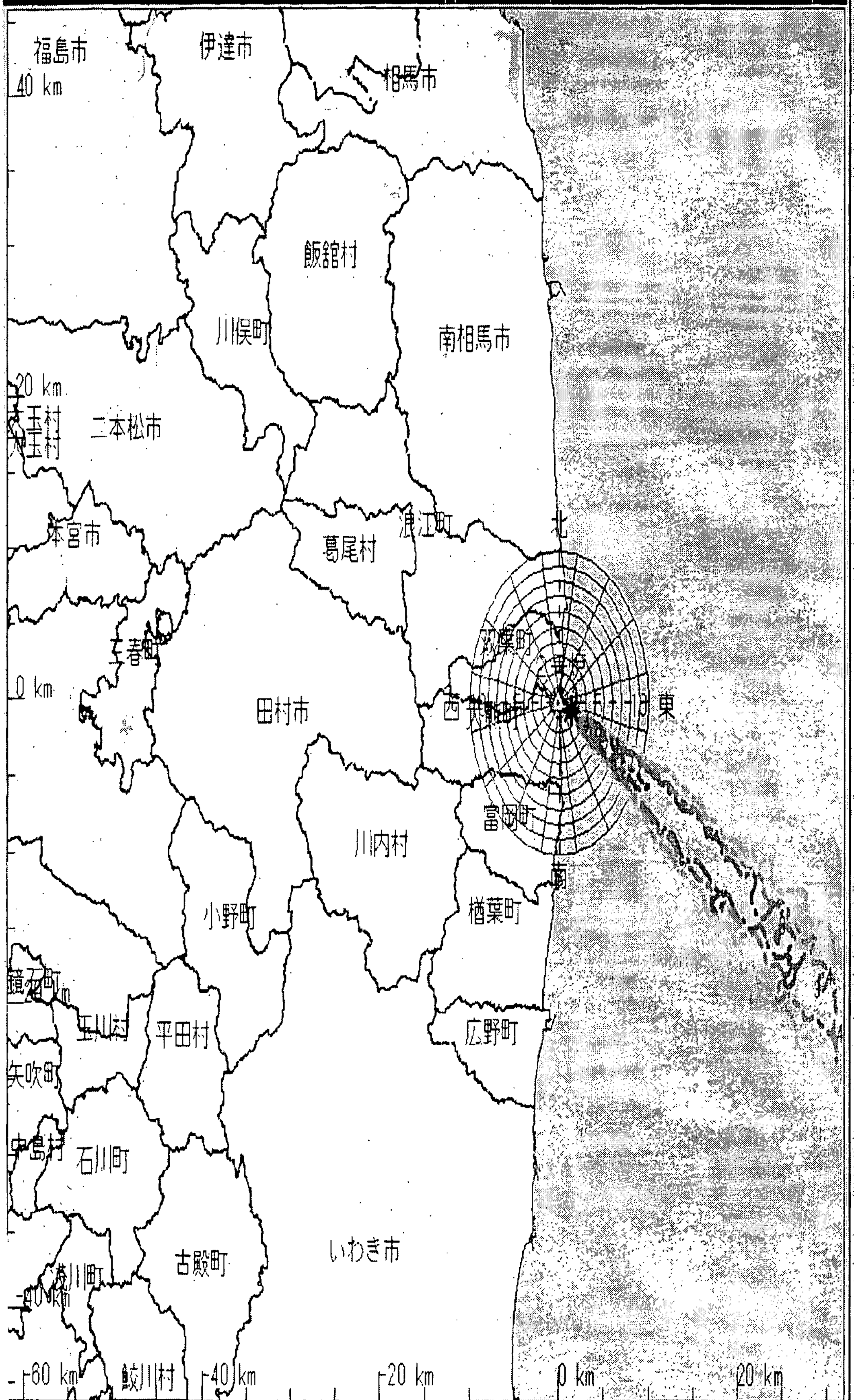
【凡例】
空気吸収線量率等値線（μGy/h）
1= 1.00×10^{-15}
2= 5.00×10^{-16}
3= 1.00×10^{-16}
4= 5.00×10^{-17}
5= 1.00×10^{-17}

最大線量率＝2.320×10^{-15} μGy/h
放出地点から　(　1.5, -0.7) km (× 印)

計算モデル名＝ PRWDA21
使用モデル名＝ 通常モデル
【計算条件】
計算メッシュ幅　水平方向＝ 1.00 km
放出高　＝ 120.0m
燃焼度　＝ 20000 MWD/MTU
原子炉停止時刻＝ 2011/03/11 16:00
放出開始時刻　＝ 2011/03/17 18:00
放出モード＝単位量放出

１８時定期福島１－２号

multi03



計算結果表示2

空気吸収線量率

空気吸収線量率

日時＝ 2011/03/17 20:00 -
2011/03/17 21:00
気象データ＝ ＧＰＶ＋観測値
(2011/03/17 18:00) まで

福島第１　２号炉　広域図
放出地点　　: 141°02'08" - 37°25'18"
領域　　　　: 92km X 92km
核種名　　＝ 希ガス

【凡例】
空気吸収線量率等値線 (μGy/h)

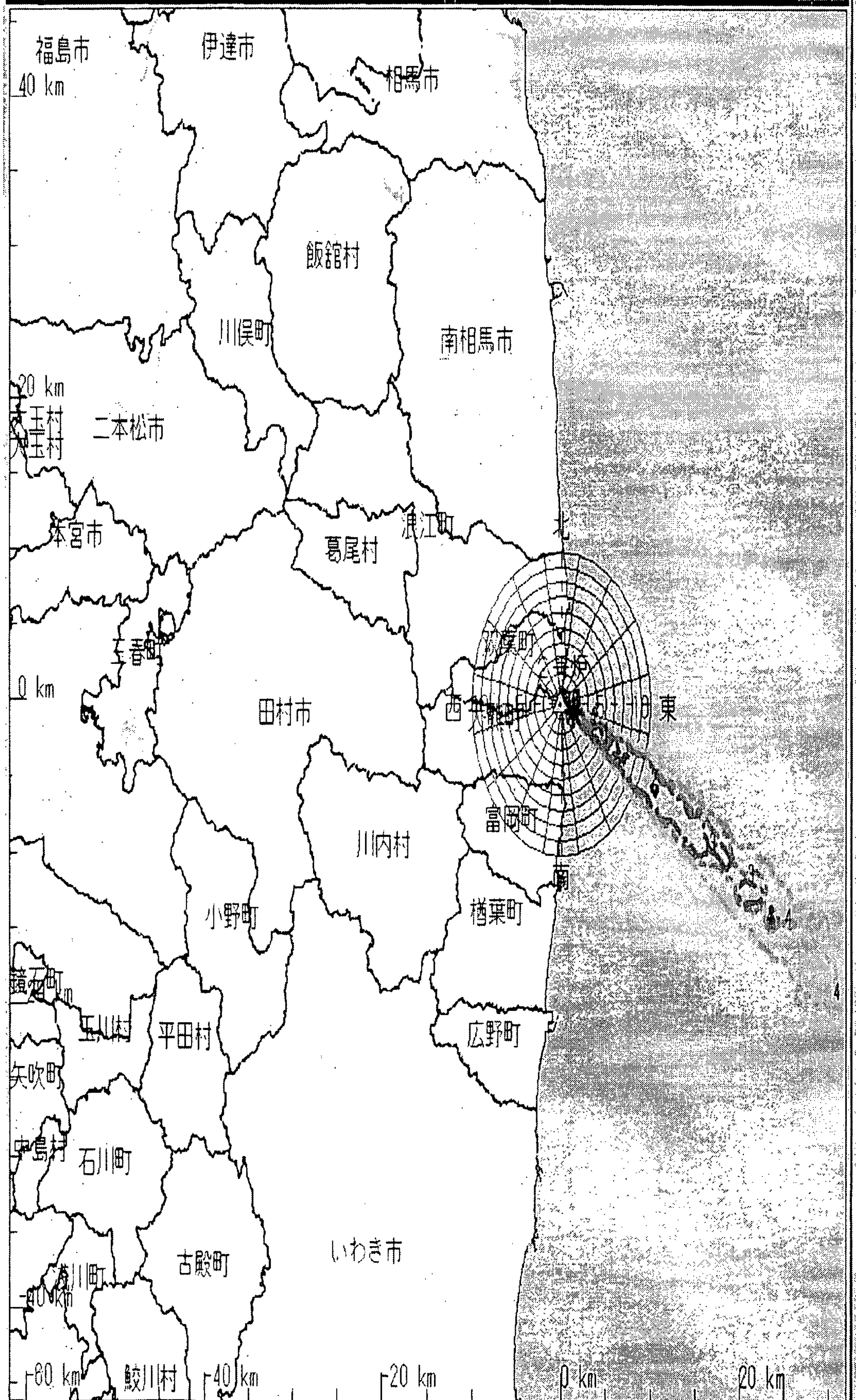
1: 1.00×10^{-15}
2: 5.00×10^{-16}
3: 1.00×10^{-16}
4: 5.00×10^{-17}
5: 1.00×10^{-17}

最大線量率＝1.468×10^{-15} μGy/h
放出地点から　(1.5, -0.7) km (＊印)

計算モデル名＝ PRWDA21
使用モデル名＝ 通常モデル
【計算条件】
計算メッシュ幅　水平方向＝ 1.00 km
放出高　＝ 120.0m
燃焼度　＝ 20000 MWD/MTU
原子炉停止時刻＝ 2011/03/11 16:00
放出開始時刻　＝ 2011/03/17 18:00
放出モード＝単位量放出

１８時定期福島１－２号

multi03



計算結果表示2

空気吸収線量率

空気吸収線量率
日時＝ 2011/03/17 18:00 -
2011/03/17 19:00
気象データ＝ ＧＰＶ＋観測値
(2011/03/17 18:00) まで

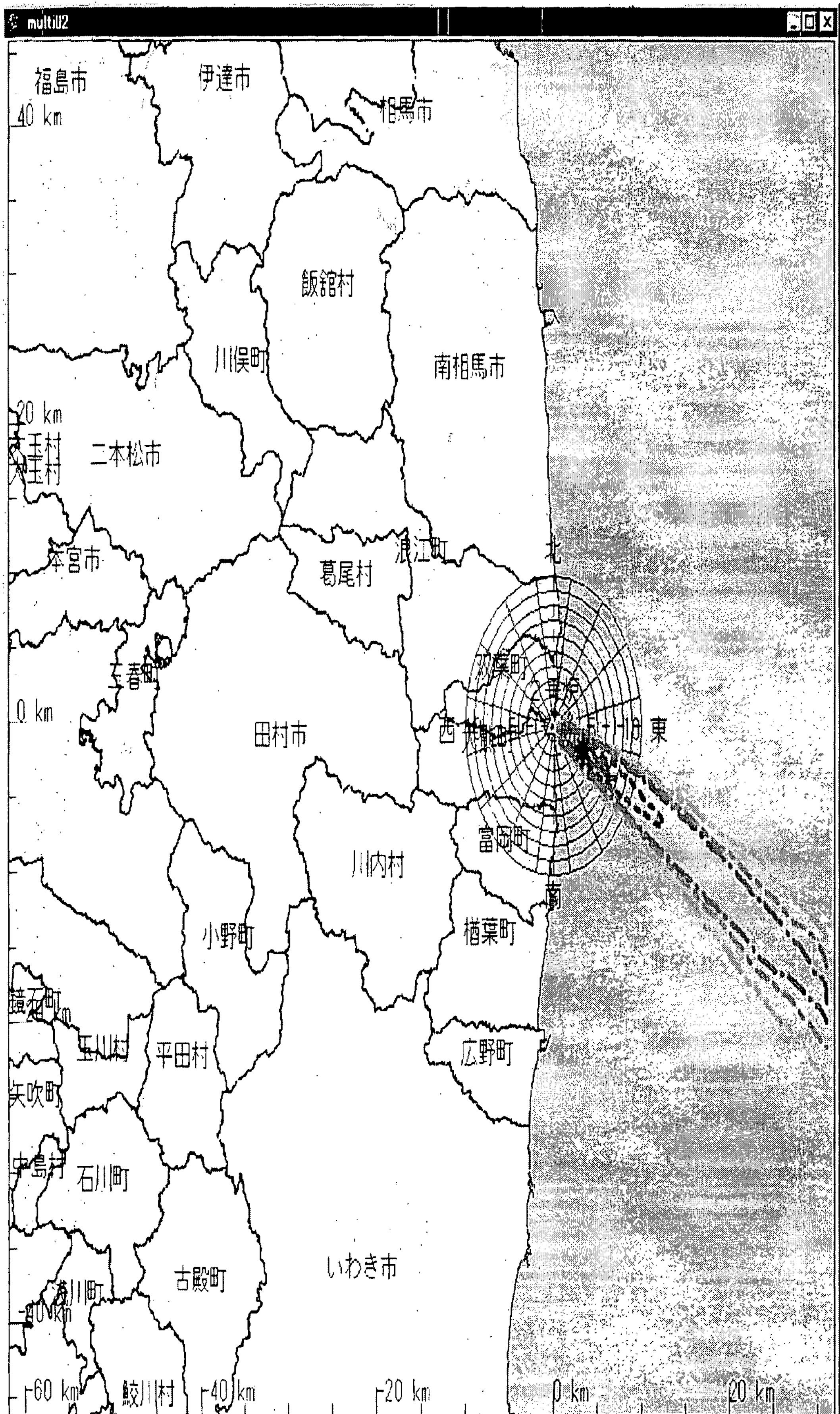
福島第１　２号炉　広域図
放出地点　：141°02'08" - 37°25'18"
領域　：92km X 92km
核種名　＝ 希ガス

【凡例】
空気吸収線量率等値線（μGy/h）
1: 1.00×10^{-15}
2: 5.00×10^{-16}
3: 1.00×10^{-16}
4: 5.00×10^{-17}
5: 1.00×10^{-17}

最大線量率＝2.247×10^{-15} μGy/h
放出地点から　（ 1.5, -0.7）km（＊印）

計算モデル名＝ PRWDA21
使用モデル名＝ 通常モデル
【計算条件】
計算メッシュ幅　水平方向＝ 1.00 km
放出高　＝ 120.0m
燃焼度　＝ 20000 MWD/MTU
原子炉停止時刻＝ 2011/03/11 16:00
放出開始時刻　＝ 2011/03/17 18:00
放出モード＝単位量放出

１８時定期福島１－２号



計算結果表示1

大気中濃度(ヨウ素)(地上高)

大気中濃度（ヨウ素）（地上高）

日時＝ 2011/03/17 19:00 -
2011/03/17 20:00

気象データ＝ ＧＰＶ＋観測値
(2011/03/17 18:00) まで

福島第１　２号炉　広域図

放出地点　: 141°02'08" - 37°25'18"

領域　: 92km X 92km

表示高度 ＝　1.00 m

【凡例】

大気中濃度等値線 (Bq/m3)

1: 1.00×10^{-10}

2: 5.00×10^{-11}

3: 1.00×10^{-11}

4: 5.00×10^{-12}

5: 1.00×10^{-12}

最大濃度＝1.616×10^{-10}Bq/m3

放出地点から　(3.5, -1.7) km (＊印)

計算モデル名＝ PRWDA21

使用モデル名＝ 通常モデル

【計算条件】

計算メッシュ幅　水平方向＝ 1.00 km

放出高　＝ 120.0m

燃焼度　＝ 20000 MWD/MTU

原子炉停止時刻＝ 2011/03/11 16:00

放出開始時刻　＝ 2011/03/17 18:00

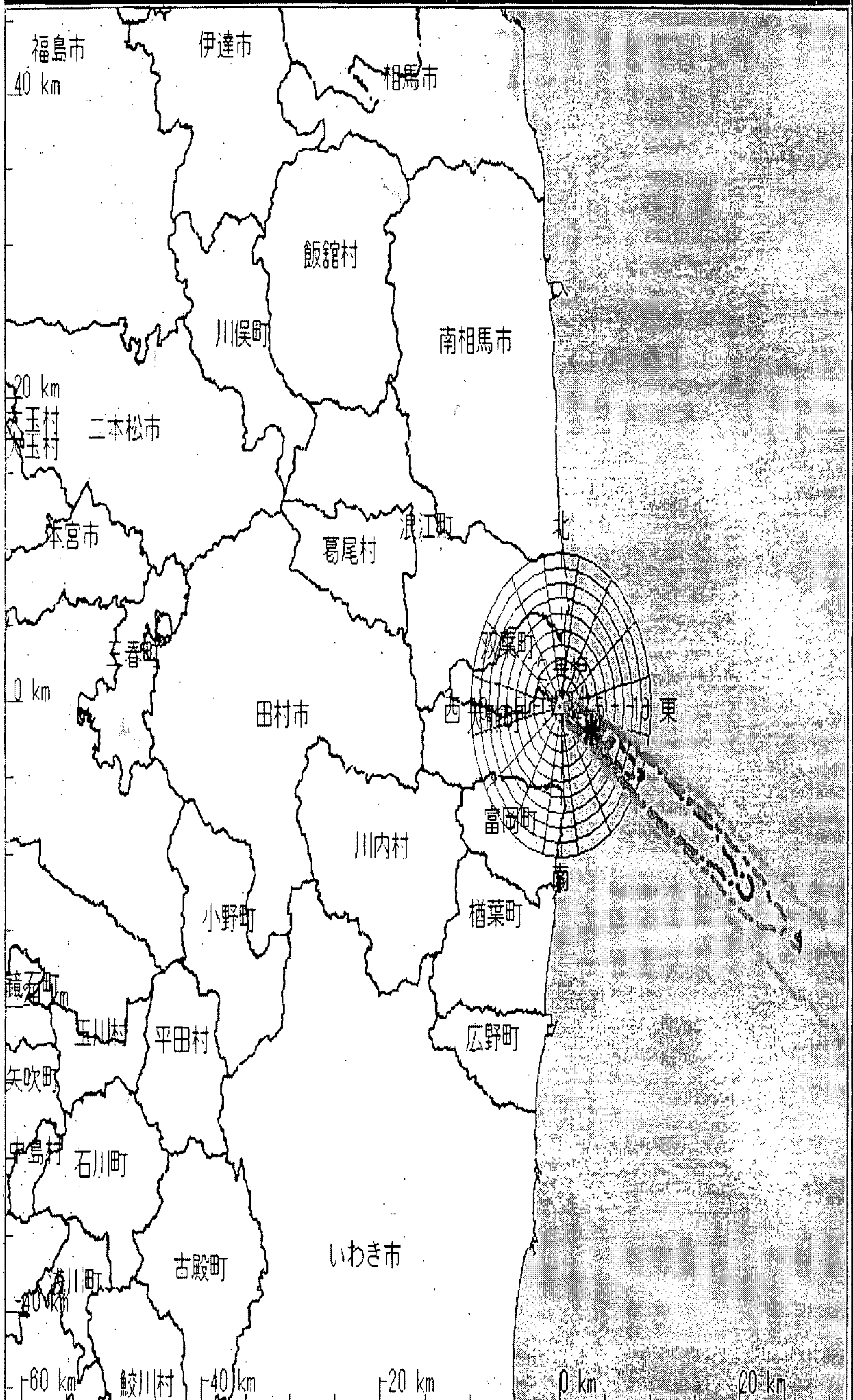
放出モード＝単位量放出

放出核種・放出率(積算)：Bq/h (Bq)

ヨウ素　: 1.00×10^{0} (1.00×10^{0})

１８時定期福島１－２号

multi01



計算結果表示0

大気中濃度(ヨウ素)(地上高)

大気中濃度（ヨウ素）（地上高）

日時＝ 2011/03/17 18:00 -
2011/03/17 19:00
気象データ＝ ＧＰＶ＋観測値
(2011/03/17 18:00) まで

福島第１　２号炉　広域図
放出地点　　：141°02'08" - 37°25'18"
領域　　　　：92km X 92km
表示高度 ＝　　1.00 m

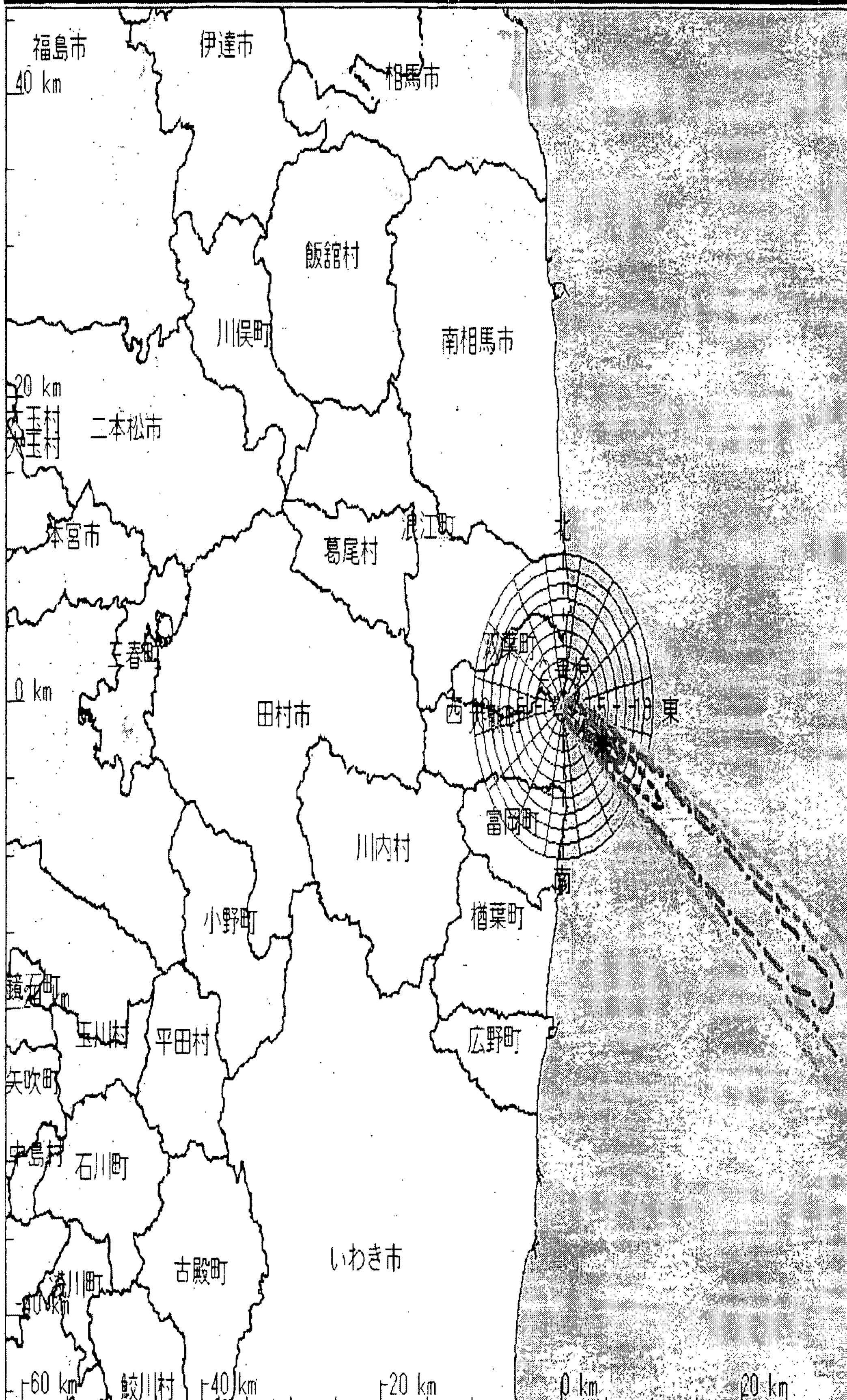
【凡例】
大気中濃度等値線 (Bq/m3)
1= 1.00×10^{-10}
2= 5.00×10^{-11}
3= 1.00×10^{-11}
4= 5.00×10^{-12}
5= 1.00×10^{-12}

最大濃度＝1.455×10^{-10}Bq/m3
放出地点から　(　3.5, -1.7) km (* 印)

計算モデル名＝ PRWDA21
使用モデル名＝ 通常モデル
【計算条件】
計算メッシュ幅 ´水平方向＝ 1.00 km
放出高　＝ 120.0m
燃焼度　＝ 20000 MWD/MTU
原子炉停止時刻＝ 2011/03/11 16:00
放出開始時刻　＝ 2011/03/17 18:00
放出モード＝単位量放出
放出核種・放出率(積算)：Bq/h (Bq)
ヨウ素　　　：　1.00×10^{0} (1.00×10^{0})

１８時定期福島１－２号

multi02



計算結果表示1

大気中濃度(ヨウ素)(地上高)

大気中濃度（ヨウ素）（地上高）
日時＝ 2011/03/17 20:00 -
2011/03/17 21:00
気象データ＝ ＧＰＶ＋観測値
(2011/03/17 18:00) まで

福島第１　２号炉　広域図
放出地点　　：141°02'08" - 37°25'18"
領域　　　　：92km X 92km
表示高度 ＝　 1.00 m

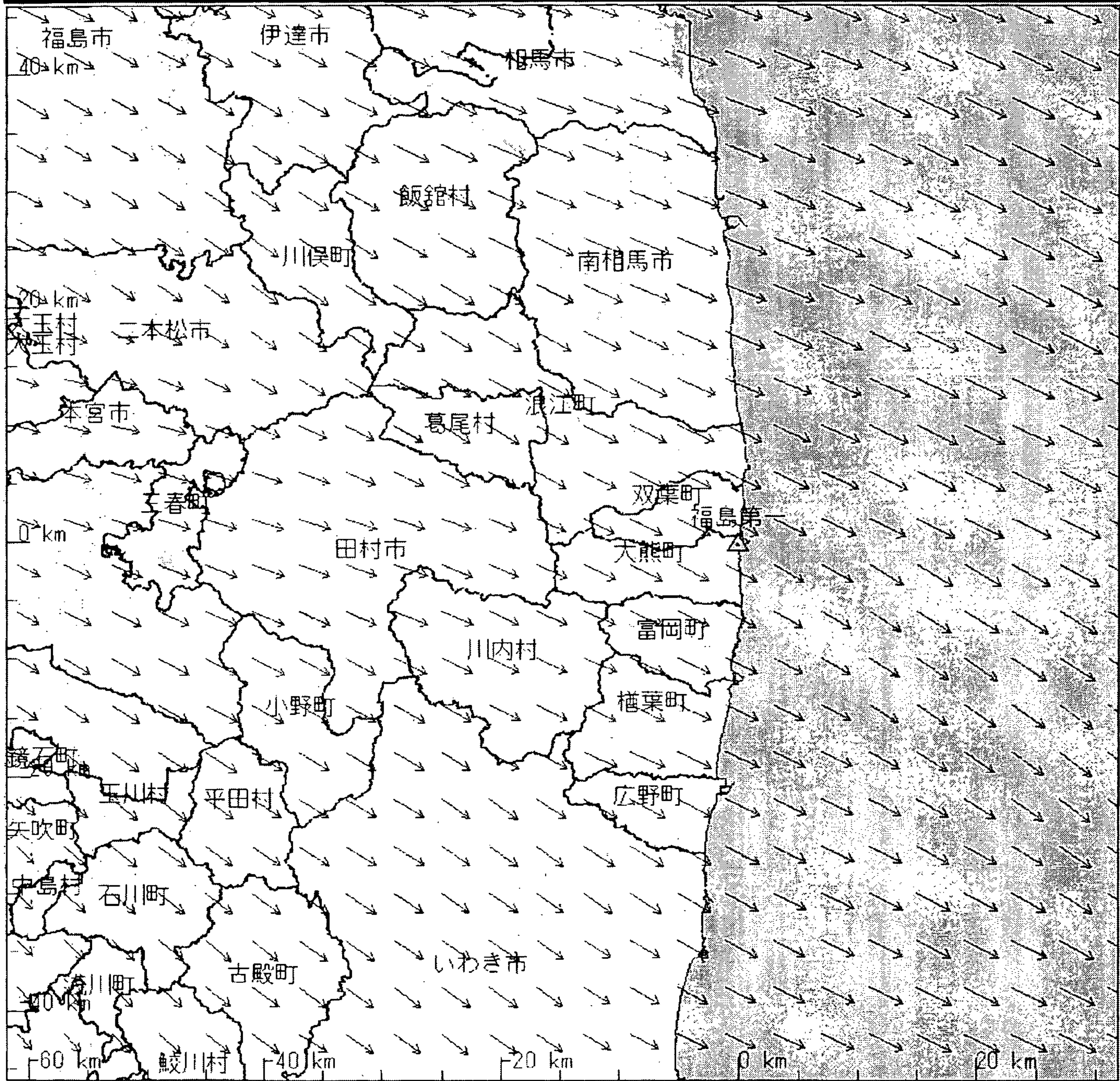
【凡例】
大気中濃度等値線 (Bq/m3)
1: 1.00×10^{-10}
2: 5.00×10^{-11}
3: 1.00×10^{-11}
4: 5.00×10^{-12}
5: 1.00×10^{-12}

最大濃度＝1.508×10^{-10}Bq/m3
放出地点から （ 4.5, -2.7) km (* 印)

計算モデル名＝ PRWDA21
使用モデル名＝ 通常モデル
【計算条件】
計算メッシュ幅　水平方向＝ 1.00 km
放出高　＝ 120.0m
燃焼度　＝ 20000 MWD/MTU
原子炉停止時刻＝ 2011/03/11 16:00
放出開始時刻　＝ 2011/03/17 18:00
放出モード＝単位量放出
放出核種・放出率(積算)：Bq/h (Bq)
ヨウ素　　　：1.00×10^{0} (1.00×10^{0})

１８時定期福島１－２号

multi01



計算結果表示:0

風速場(地上高)

風速場(地上高)

日時＝ 2011/03/17 18:00
気象データ＝ ＧＰＶ＋観測値
(2011/03/17 18:00) まで

福島第１ 広域図
サイト中心 : 141°02'10" - 37°25'12"
領域 : 92km X 92km
表示高度 ＝ 120.00 m
サイト中心付近の風 ：西北西 11.5 m/s
大気安定度：Ｄ型

計算モデル名＝ PHYSIC
計算メッシュ幅 水平方向＝ 2.00 km

【凡例】
標準風速（標準領域の場合の長さ）
→ ＝ 10 m/s

１８時定期福島１－２号

From: Smith, Brooke
To: LIA03 Hoc; Kolb, Timothy
Cc: Trapp, James; Foggie, Kirk; LIA08 Hoc; LIA02 Hoc
Subject: Re: Support Request List
Date: Thursday, March 17, 2011 2:42:42 AM

We are faxing the list now. Let us know if you get it.

Sent from an NRC Blackberry.
Brooke G. Smith
(b)(6)

From: LIA03 Hoc
To: Kolb, Timothy
Cc: Trapp, James; Foggie, Kirk; Smith, Brooke; LIA08 Hoc; LIA02 Hoc
Sent: Thu Mar 17 02:40:57 2011
Subject: Support Request List

Tim,

In the phone call Chuck Casto just had with the ET Chuck said that he would be sending a "List of Request s to the US Government." USAID is asking for more specificity on the list (e.g. what size and capacity of generator is needed) so that they can source and procure the specific items.

Please let us know if you have any questions.

Thanks,

Brian Wittick

000|311

From: Trapp, James
To: joseph.hughart@foh.hhs.gov
Subject: FW: JAPANESE TRAVELER INFORMATION.doc
Date: Thursday, March 17, 2011 2:32:22 AM

From: LIA03 Hoc
Sent: Tuesday, March 15, 2011 7:51 PM
To: CherryRC@state.gov; Ulses, Anthony; Trapp, James
Subject: JAPANESE TRAVELER INFORMATION.doc

Updated to reflect Japan time. All travelers staying at

(b)(6)

Thanks!

-Jenny

000312

From: Virgilio, Martin
To: Virgilio, Rosetta
Subject: Fw: Event Response - Communications and Qs&As
Date: Thursday, March 17, 2011 2:15:14 PM

Note the promised support to the Regions (including your RSLOs)

From: Satorius, Mark
To: Leeds, Eric; Collins, Elmo; McCree, Victor; Dean, Bill; Pederson, Cynthia
Cc: Virgilio, Martin; Weber, Michael
Sent: Thu Mar 17 11:19:28 2011
Subject: RE: Event Response - Communications and Qs&As

great support - thanks Eric.

From: Leeds, Eric
Sent: Wednesday, March 16, 2011 6:01 PM
To: Collins, Elmo; Satorius, Mark; McCree, Victor; Dean, Bill
Cc: Virgilio, Martin; Weber, Michael
Subject: FYI: Event Response - Communications and Qs&As

See below – we've upped our ante and are doing our best to support the regions.

Eric J. Leeds, Director
Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
301-415-1270

From: Nelson, Robert
Sent: Wednesday, March 16, 2011 3:13 PM
To: Lew, David; Wert, Leonard; Pederson, Cynthia; Howell, Arthur
Cc: Giitter, Joseph; Leeds, Eric; Boger, Bruce; Ruland, William; Meighan, Sean; Nguyen, Quynh; Thomas, Eric; Thorp, John
Subject: Event Response - Communications and Qs&As

I've been assigned as the NRR Communications Coordinator for matters dealing with our response to the events in Japan.

1. I understand that you were recently sent the Chairman's Qs&As. I understand that EOC meetings are beginning next week and the regional staff need to be prepared for stakeholder questions that will arise regarding the events & our plants. Are these Qs&As sufficient? If not, what additional areas do you want addressed?
2. Please identify a POC in your region that my team & I can coordinate with on communications issues.
3. I understand that a concern was raised about the Ops Center contacting a family member and that a protocol is needed for such contact. I'm working on it.
4. We will likely formulate a "tiger team" to prepare responses to written inquiries. I'll keep you advised.
5. Communications with the regions, particularly those requesting information regarding specific plants, should be coordinated thru my team. If you have concerns in this regard, please contact me.

000313

R.A. Nelson

Robert A. Nelson
Deputy Director
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation
NRC

E-mail: robert.nelson@nrc.gov | Office: (301) 415-1453 | (b)(6) Fax: (301) 415-2102|

From: LIA06 Hoc
To: "INPO EmergencyResponseCtr (INPO)"
Cc: Virgilio, Martin; Miller, Chris; Casto, Chuck
Subject: RE: INPO Resources
Date: Thursday, March 17, 2011 7:18:38 AM

Two things for INPO:

- Hold off on finding equipment for now as we are still finalizing the detailed equipment list.
- We do need a SAMG expert if you can provide one. Please give me any details regarding availability.

Thanks,

Mark Lombard, LT Director

From: Miller, Chris
Sent: Thursday, March 17, 2011 4:13 AM
To: 'INPO EmergencyResponseCtr (INPO)'; LIA06 Hoc; Casto, Chuck
Cc: Virgilio, Martin
Subject: RE: INPO Resources

Yes in the near term, someone with severe accident management background is what is being sought.
Thanks
chris

Christopher G. Miller
Deputy Director for Emergency Preparedness
US Nuclear Regulatory Commission
Office of Nuclear Security and Incident Response
Division of Preparedness and Response
work 301-415-1086
cel (b)(6)

From: INPO EmergencyResponseCtr (INPO) [mailto:INPOERC@INPO.org]
Sent: Thursday, March 17, 2011 3:32 AM
To: LIA06 Hoc; Casto, Chuck
Cc: Miller, Chris
Subject: RE: INPO Resources

Gents: Just to confirm, you would like that support in Japan as soon as possible. Is that correct?

Fred Rehrig
INPO Team Leader
Emergency Response Center

000314

From: LIA06 Hoc [mailto:LIA06.Hoc@nrc.gov]
Sent: Thursday, March 17, 2011 3:24 AM
To: Casto, Chuck
Cc: Miller, Chris; INPO EmergencyResponseCtr (INPO)
Subject: INPO Resources

Chuck –

We have engaged INPO to support your efforts with someone on your team. The request that came back was to identify the skill sets that would be needed. I have cc'd the INPO e-mail address so that you can respond directly back, and please include us in that communication.

Please advise at your earliest opportunity.

Tom Blount

From:	McCree, Victor
To:	Virgilio, Martin; Leeds, Eric; Dean, Bill; Satorius, Mark; Collins, Elmo
Cc:	Howell, Art; Pederson, Cynthia; Lew, David; Wert, Leonard
Subject:	FW: Information regarding a device that could assist recovering Spent Fuel Pool cooling and inventory at the Japanese Plants
Date:	Thursday, March 17, 2011 7:18:32 AM
Attachments:	Spent Fuel Pool Spray Nozzle Overview.docx
Importance:	High

Marty, et.al.,

See below/attached, for your information.

Vic

From: Croteau, Rick
Sent: Thursday, March 17, 2011 7:07 AM
To: McCree, Victor; Wert, Leonard
Cc: Jones, William
Subject: FW: Information regarding a device that could assist recovering Spent Fuel Pool cooling and inventory at the Japanese Plants
Importance: High

Vic/Len,
We sent this info to the HOO yesterday. The HOO called Andy Sabisch last night requesting Duke box up the equipment to send to Japan and that is taking place. Duke has spares.
Rick

From: Bartley, Jonathan
Sent: Wednesday, March 16, 2011 2:28 PM
To: HOO Hoc; OPA Resource
Cc: Sabisch, Andrew; Croteau, Rick; Jones, William
Subject: Information regarding a device that could assist recovering Spent Fuel Pool cooling and inventory at the Japanese Plants
Importance: High

Attached is a document that describes a device that Duke developed as a B.5.b strategy for providing cooling to the spent fuel pools after a catastrophic event. Please contact Andy Sabisch, Oconee SRI, if you have any questions or need a POC at Duke to discuss the device.

From: Sabisch, Andrew
Sent: Wednesday, March 16, 2011 1:40 PM
To: Bartley, Jonathan
Subject: Information regarding a device that could assist recovering Spent Fuel Pool cooling and inventory

Please review this

==================================

Andrew T. Sabisch
U.S. Nuclear Regulatory Commission
Senior Resident Inspector

000315

Oconee Nuclear Station
Seneca, SC 29678
(O) 864-882-6927/6928
(F) 864-882-0189
(b)(6)

Bozin, Sunny

From: Dave Lochbaum [DLochbaum@ucsusa.org]
Sent: Thursday, March 17, 2011 10:19 AM
To: Burnell, Scott
Cc: Lisbeth Gronlund
Subject: UCS first annual report on NRC's performance

Last Friday, UCS was on Capitol Hill to brief congressional staffers on a report on the NRC's performance in 2010. We intend this report to be the first in an annual series of reports. We had planned to release the report this week. Events in Japan delayed that scheduled release by one day. The report will be released this morning at 11am during a media conference call. The report has already been posted to the UCS website at:

http://www.ucsusa.org/nuclear_power/nuclear_power_risk/safety/nrc-and-nuclear-power-2010.html

Thanks,

David Lochbaum
Director, Nuclear Safety Project
Union of Concerned Scientists
PO Box 15316
Chattanooga, TN 37415
(423) 468-9272 office
(b)(6)
dlochbaum@ucsusa.org

Check out the UCS blog at nuclear weapons and nuclear power issues, including a weekly series called "Fission Stories" at http://allthingsnuclear.org/

Founded in 1969, the Union of Concerned Scientists is an independent, science-based nonprofit working for a healthy environment and a safer world.

000316

Bozin, Sunny

From: Herr, Linda
Sent: Thursday, March 17, 2011 7:08 AM
To: Nieh, Ho; Bozin, Sunny
Subject: RE: Japan TAC - not necessary - if you think otherwise, please see me. Thanks.

Thanks Ho, no I don't think this is necessary but wanted to run it by you in the event it was applicable to our office. Linda

From: Nieh, Ho
Sent: Wednesday, March 16, 2011 6:17 PM
To: Herr, Linda; Bozin, Sunny
Subject: Japan TAC - not necessary - if you think otherwise, please see me. Thanks.

Ho Nieh
Chief of Staff
Office of Commissioner William C. Ostendorff
U.S. Nuclear Regulatory Commission
(301) 415-1811 (office)
(b)(6)
(301) 415-1757 (fax)
ho.nieh@nrc.gov

000/317

Kock, Andrea

From: Kock, Andrea
Sent: Thursday, March 17, 2011 1:49 PM
To: Rossi, Roberta
Subject: Re: Obama Press Conf on JAPAN @ 3:30 Today per WTOP @ lunch.

Thanks. I'm at EBB. I might need to come back early to see it

Sent from NRC blackberry
Andrea Kock
(b)(6)

From: Rossi, Roberta
To: Kock, Andrea
Sent: Thu Mar 17 13:47:35 2011
Subject: Obama Press Conf on JAPAN @ 3:30 Today per WTOP @ lunch.

0001378

From: Virgilio, Rosetta
To: Nelson, Robert
Subject: Fw: ACTION: NGA Center in DC Requests NRC Expert Speaker for 3/22 or 3/23 and 4/4
Date: Friday, March 18, 2011 12:37:11 AM
Importance: High

Bob - Should I be working through you on this request?

Sent from an NRC Blackberry
Rosetta O. Virgilio
(b)(6)

From: Virgilio, Rosetta
To: Harrington, Holly
Cc: Ellmers, Glenn; Landau, Mindy
Sent: Fri Mar 18 00:18:39 2011
Subject: ACTION: NGA Center in DC Requests NRC Expert Speaker for 3/22 or 3/23 and 4/4

Holly - Since sending out my initial request, I've been informed by Marty that Bob Nelson is heading up a NRC communications effort and also that Brian Sheron, Mike Johnson, Eric Leeds, and Cathy Haney have been appointed NRC Communicators. Can I approach them directly?

Sent from an NRC Blackberry
Rosetta O. Virgilio
(b)(6)

From: Landau, Mindy
To: Harrington, Holly
Cc: Ellmers, Glenn; Virgilio, Rosetta
Sent: Thu Mar 17 18:01:37 2011
Subject: Fw: NGA Center NRC expert speaker requests

Holly - what's our posture? Does Eliot have an opinion on whether we should agree to this request?

Sent from my NRC Blackberry
Mindy Landau
(b)(6)
Mindy.Landau@nrc.gov

From: Virgilio, Rosetta
To: Landau, Mindy; Ellmers, Glenn
Cc: Piccone, Josephine; Jackson, Deborah; Ryan, Michelle; Turtil, Richard
Sent: Thu Mar 17 17:17:28 2011
Subject: Fw: NGA Center NRC expert speaker requests

Mindy/Glenn - Please see below. I understand Mike Weber has suggested that "NRC ambassadors" could go out and do this sort of thing. Can you help identify who these folks are so I can move this request forward? NGA indicated they could set up a bridge line in the event NRC was unable to physically travel downtown. I did indicate staff is pretty stretched and is looking to hold a public Commission meeting next week, which might satisfy their needs; perhaps we could instead entertain the April 4 meeting.

0001319

Anything you can do to help me move this request forward would be appreciated.

Sent from an NRC Blackberry
Rosetta O. Virgilio
(b)(6)

From: Virgilio, Rosetta
To: 'gdierkers@NGA.ORG' <gdierkers@NGA.ORG>
Sent: Thu Mar 17 17:03:28 2011
Subject: Re: NGA Center NRC expert speaker requests

Thank you, Greg; I will followup and get back to you.

Sent from an NRC Blackberry
Rosetta O. Virgilio
(b)(6)

From: Dierkers, Gregory <gdierkers@NGA.ORG>
To: Virgilio, Rosetta
Cc: Gander, Sue <sgander@NGA.ORG>; MacLellan, Thomas <TMaclellan@NGA.ORG>; Ferro, Carmen <CFerro@NGA.ORG>
Sent: Thu Mar 17 16:36:04 2011
Subject: NGA Center NRC expert speaker requests

Hi Rosetta,

Thanks for your time today. We appreciate you identifying someone from the NRC to support the NGA Center's outreach to states during this busy time.

As we discussed we would like to invite the NRC to join us for **two upcoming events -- a webinar next week and a conference in early April -- to brief governors' advisors on the Japanese situation and the implications for US plants**. The events are:

1) **A webinar with governors' security and energy advisors.** NGA Center staff is planning to host a conference call next week (Tuesday 3/21 or Wednesday 3/22) to provide senior state officials with an update on the Japan situation and to answer questions as to the operations of US plants, including regulations, plant security/safety, and the emergency preparedness efforts at the US nuclear fleet. <u>We would ask that an NRC expert join the webinar remotely; the webinar would last for 1 hour.</u>

2) **An in-person speaker at a governors' energy advisors meeting.** NGA Center's *Governors' Energy Advisors Policy Institute* on April 4th in Arlington, Virginia. The focus of the April 4th Institute is to provide a 'Technology 101' briefing for governors senior energy advisors. <u>We would invite the NRC to attend in-person on April 4th from 1:45pm to 4:15pm. We would ask for a 10-15 minute presentation on the situation in Japan, the state of nuclear technology and regulations in the US, and the implications for states from the Japanese crisis. Attached is a draft agenda.</u>

Thanks for considering both of these requests.

Sincerely,

Greg Dierkers
Program Director – Energy and Transportation
NGA Center for Best Practices
Environment, Energy and Transportation Division
202-624-7789
gdierkers@nga.org

From: Droggitis, Spiros
Sent: Friday, March 18, 2011 10:16 AM
To: Powell, Amy; Decker, David; Riley (OCA), Timothy
Subject: FW: DNDO News 3/18/2011
Attachments: DNDO NEWS 3-18-11.htm

From: Bolling, Lloyd [mailto:Lloyd.Bolling@dhs.gov]
Sent: Friday, March 18, 2011 10:05 AM
To: Layton, Michael; Reis, Terrence; Jones, Cynthia; Wastler, Sandra; Jackson, Gerard
Cc: Droggitis, Spiros; Dembek, Stephen; Owens, Janice; Casey, Timothy
Subject: DNDO News 3/18/2011

Attached is the DNDO News for Friday, March 18, 2011.

Summary of news items:

1. Radiation from Japan triggers detectors at U.S. Airports (Chicago, Dallas/Ft. Worth & Los Angeles).
2. Pentagon sends radiation detection plane to monitor Japan's nuclear crisis.
3. US radiation-detection experts and supplies sent to help Japan.

Lloyd Bolling
NRC Liaison
Operations Support Directorate
Domestic Nuclear Detection Office
Department of Homeland Security
Phone: 202-254-7123
Blackberry: (b)(6) [redacted]
Fax: 202-25[redacted]
Lloyd.Bolling@dhs.gov

0001320

March 18, 2011 DNDO News Brief

Radiation Detections Triggered at U.S. Airports

Chicago's O'Hare Airport - http://abclocal.go.com/wls/story?section=news/local&id=8020365
Dallas/Ft. Worth Airport - http://www.wfaa.com/news/local/Radiation-concerns-at-DFW-118184579.html
Los Angeles International Airport - http://www.nbclosangeles.com/news/local/US-Customs-Monitoring-Flights-at-LAX-for-Radiation-Levels-118182059.html

Pentagon Sends Radiation Detection Plane to Monitor Japan's Nuclear Crisis

Viola Gienger, Bloomberg – The Pentagon is sending a Boeing Company plane, equipped to detect radioactive "clouds" from nuclear tests, to sample air for radiation from the damaged Fukushima nuclear plant in Japan. The WC-135W Constant Phoenix, a modified Boeing C-135, has equipment designed to collect particulates and whole-air samples. http://www.bloomberg.com/news/2011-03-17/pentagon-sends-radiation-detection-plane-to-monitor-japan-s-nuclear-crisis.html

US Radiation-Detection Experts and Supplies Sent to Help Japan

Media Newswire (press release) - Deputy Secretary of Energy Dan Poneman spoke to reporters via teleconference March 16 and said the Energy Department's radiation detectors are already being used to collect data.
http://media-newswire.com/release_1145837.html

Lee, Richard

From: Dehn, Jeff
Sent: Friday, March 18, 2011 7:53 AM
To: Schwartzman, Jennifer; Lee, Richard
Cc: Wagner, Katie; Sangimino, Donna-Marie
Subject: FW: Japanese TV request for Snadia video footage. FW: NHK-TV, Japan - Sandia OECD Lower Head Failure Project - final report

Hi Jen, looks like NEA is now asking for our OK before sharing the video footage they found. Was this discussed within the Ops Center at any length?

Richard, are you the appropriate POC for this project at this point, and if so, any reservations with approving the video they identify below?

Do we need to pursue a legal opinion on whether video is handled like data in the public domain?

THanks,
Jeff

From: Diane.JACKSON@oecd.org [Diane.JACKSON@oecd.org]
Sent: Friday, March 18, 2011 7:27 AM
To: Dehn, Jeff; Sangimino, Donna-Marie
Cc: Janice.DUNNLEE@oecd.org; Javier.REIG@oecd.org
Subject: Japanese TV request for Snadia video footage. FW: NHK-TV, Japan - Sandia OECD Lower Head Failure Project - final report

Hello Jeff –

A Japanese news station would like to obtain footage and report of the Oct 23 2000 experiment the OECD had requested Sandia to conduct. Please see below the news release from Sandia.
http://www.sandia.gov/media/NewsRel/NR2000/vessel.htm

In the e-mail below, the video is identified from the secure NEA website (and information to access it).

Bottom line, the data from the project is now publically available, but there is a question if video footage is included or not.

Before making any decision, the NEA would like to check with the NRC.

Best regards,
Diane Jackson, Nuclear Safety Specialist
Nuclear Safety Division, OECD Nuclear Energy Agency (NEA)
Tel.: +33 (0)1 45 24 10 55, Diane.Jackson@oecd.org

From: GAS Serge, NEA/RE
Sent: Friday, March 18, 2011 12:03
To: DUNN LEE Janice, NEA; JACKSON Diane, NEA/SURN
Cc: CLAPPER Maureen [United States]; STANFORD Benjamin, NEA/RE
Subject: FW: NHK-TV, Japan - Sandia OECD Lower Head Failure Project - final report

Hello Janice and Diane,

000/321

Please see below – I assume you can download the video from this link (Ben will otherwise advise how to proceed).

http://www.oecd-nea.org/press/accredited/video/OLHF-2.mpg

Please use the following username and password:

(b)(6)

Could you please make sure that NRC has no objection to the release of the footage?

Thanks in advance.

Best regards,

Serge

From: GAS Serge, NEA/RE
Sent: Friday, March 18, 2011 11:56
To: 'KAMADA TOSHIHIKO'
Cc: DUNN LEE Janice, NEA; YOSHIMURA Uichiro, NEA/SRAN; REIG Javier, NEA/SURN
Subject: NHK-TV, Japan - Sandia OECD Lower Head Failure Project - final report

Dear Toshi,

I am being told that we could be entitled to send it but we don't want to do that without the Japanese government's green light and the US NRC's since they were the main funding organisation at the time. We are starting now to see with the US NRC is it is fine with them. If you could look on your side. Thanks a lot in advance.

Best regards,

Serge

From: KAMADA TOSHIHIKO [mailto:toshihiko.kamada@mofa.go.jp]
Sent: Friday, March 18, 2011 11:22
To: STANFORD Benjamin, NEA/RE; GAS Serge, NEA/RE
Cc: YOSHIMURA Uichiro, NEA/SRAN
Subject: RE: FW: NHK-TV, Japan - Sandia OECD Lower Head Failure Project - final report

Dear Mr. Benjamin Stanford and Serge,

Thank you very much for your information!

May I ask you a question?

Whose possession is the contents and data of this video and the report?

(member country?, project participants?, NEA? or others?)

Is it possible to think that NEA has right to decide whether this should be open or not?

Best regards,

Toshi

//
oshihiko KAMADA
irst Secretary (Science and Technology)
Permanent Delegation of Japan to the OECD
TEL: +33 (0)1 53 76 61 81
FAX: +33 (0)1 45 63 05 44
E-mail: toshihiko.kamada@mofa.go.jp
//
経済協力開発機構日本政府代表部
一等書記官（科学技術担当）
鎌　田　俊　彦
//

From: Benjamin.STANFORD@oecd.org [mailto:Benjamin.STANFORD@oecd.org]
Sent: Friday, March 18, 2011 10:50 AM
To: Serge.GAS@oecd.org; KAMADA TOSHIHIKO
Cc: Uichiro.YOSHIMURA@oecd.org
Subject: RE: FW: NHK-TV, Japan - Sandia OECD Lower Head Failure Project - final report

Dear Mr. Kamada,

You can download the video from this link.

http://www.oecd-nea.org/press/accredited/video/OLHF-2.mpg

Please use the following username and password:

Username (b)(6)
Password:

Please do not share this username and password. We will provide a separate one to the journalists if the video is to be shared.

Please contact me should you have any technical difficulties.

Best regards,

Benjamin Stanford
Webmaster
OECD Nuclear Energy Agency (NEA)
Tel.: +33 (0)1 45 24 10 09
benjamin.stanford@oecd.org
www.oecd-nea.org

From: GAS Serge, NEA/RE
Sent: Friday, March 18, 2011 10:41 AM
To: KAMADA Toshihiko [Company Name]
Cc: YOSHIMURA Uichiro, NEA/SRAN; STANFORD Benjamin, NEA/RE
Subject: FW: FW: NHK-TV, Japan - Sandia OECD Lower Head Failure Project - final réport
Importance: High

Dear Toshi,

Please see the exchange of messages below. In fact we have found the footage but the video could have some impact on the public so I think you should have a look before we pass it to the TV channel. Our webmaster Ben Stanford is going to send it to you very soon.

Best regards,

Serge

From: yuhong hiro koh (b)(6) [redacted]
Sent: Friday, March 18, 2011 10:15
To: GAS Serge, NEA/RE
Cc: HUERTA Alejandro, NEA/SURN; TURCHI Elodie, PAC/WASH; RUMPF Matthias, PAC/WASH; FISHER Helen, PAC/COM
Subject: Re: FW: NHK-TV, Japan - Sandia OECD Lower Head Failure Project - final report

Mr. Serge Gas,

Thank you very much for this.
Can you please tell me if you have a video footage of the experiment?
If you do, I would like to send someone from NHK Europe to retrieve it today.
I have contacted Sandia, but they unfortunately do not want to help in this matter
and are not lifting a finger. Thank you again.

Hiro

On 3/18/2011 1:55 AM, Serge.GAS@oecd.org wrote:
Dear Hiro,

This is the final report of the OECD (Sandia) Lower Head Failure project run between 2000 and 2002.

The final report is available (downloadable) on our public website:

http://www.oecd-nea.org/nsd/docs/2002/csni-r2002-27.pdf

We cannot send it since it is 570 pages and about 40 Mbytes, without the appendices.

These experiments were to assess resistance of reactor vessel in case of core melt down.

Our expert, Alejandro Huerta (copied, (b)(6) [redacted]) can help you to understand the report if you need it.

Best regards,

Mr. Serge Gas
Head, Central Secretariat, External Relations and Public Affairs
OECD Nuclear Energy Agency
Tel. : +33 1 45 24 10 10
Fax: +33 1 45 24 11 15
Le Seine Saint Germain, 12 Boulevard des Iles, 92130 Issy-les-Moulineaux, France

-----Original Message-----
From: yuhong hiro koh (b)(6)
Sent: Thursday, March 17, 2011 3:35 PM
To: TURCHI Elodie, PAC/WASH
Subject: NHK-TV, Japan

Dear Elodie,

Thank you for accommodating me over the phone just now.
We would like to obtain FOOTAGE and REPORT of the
2000, Oct 23 experiment the OECD had requested Sandia to
conduct. Please see below the news release from Sandia.
http://www.sandia.gov/media/NewsRel/NR2000/vessel.htm
I don't have a name of the experiment, but it was to see how
string the reactor vessels are to pressure and and blasts.
Again, we have a Friday night deadline for the special edition
program we are putting together on the situation at Fukushima.
I would sincerely and greatly appreciate your help.
Thank you,
Hiro

--
Yuhong Hiro Koh
NHK, Science& Nature
Tel: US ++1 310-502-4506
Fax: US ++1 310-539-3021
e: s02709-koh@nhk.or.jp
(b)(6)
Homepage: http://www.nhk.or.jp
English: http://www.nhk.or.jp/nhkworld/index.html

--
Yuhong Hiro Koh
NHK, Science & Nature
Tel: US ++1 310-502-4506
Fax: US ++1 310-539-3021

e: s02709-koh@nhk.or.jp
(b)(6)
Homepage: http://www.nhk.or.jp
English: http://www.nhk.or.jp/nhkworld/index.html

From: McIntyre, David
To: JIM SNYDER, BLOOMBERG/ NEWSROOM:
Subject: RE: Re:NRC info on new reactor applications
Date: Friday, March 18, 2011 9:44:00 AM

Hi Jim - according our Fact Sheet on Price-Anderson: "If the second tier is depleted, Congress is committed to determine whether additional disaster relief is required." Which I guess means, the taxpayer ...

-----Original Message-----
From: JIM SNYDER, BLOOMBERG/ NEWSROOM: [mailto:jsnyder24@bloomberg.net]
Sent: Friday, March 18, 2011 9:41 AM
To: McIntyre, David
Subject: Re:NRC info on new reactor applications

Hi David, I know you guys must be swamped, but I have a question about Price-Anderson. Once the first tier $375 million insurance and then the $12.6 billoin fund is exhausted, can Congress require nuclear companies to pay additional damages or does the government pick up the remaining tab? Thanks, Jim.

----- Original Message -----
From: David McIntyre <David.McIntyre@nrc.gov>
To: JIM SNYDER (BLOOMBERG/ NEWSROOM:)
At: 11/01 14:35:47

http://www.nrc.gov/reactors/new-reactors/new-licensing-files/expected-new-rx-applications.pdf

---

David McIntyre
Public Affairs Officer
U.S. Nuclear Regulatory Commission
(301) 415-8206 (direct)
(b)(6)
Protecting People & the Environment

0001322

From: Harrington, Holly
To: Burnell, Scott; Bonaccorso, Amy; McIntyre, David
Cc: Deavers, Ron
Subject: RE: K1 Pills
Date: Friday, March 18, 2011 9:53:15 AM

Yes, that is the language. Coupled with we do not expect unsafe levels etc etc

From: Burnell, Scott
Sent: Friday, March 18, 2011 9:33 AM
To: Bonaccorso, Amy; McIntyre, David; Harrington, Holly
Cc: Deavers, Ron
Subject: Re: K1 Pills

Amy;

Please double-check w/Dave and Holly, since my coffee hasn't kicked in, but here goes -- isn't there some QA language to the effect of "listen to your state and local authorities, they'll be the best source of information on actions appropriate to your area" we can use?

Scott

Sent from an NRC Blackberry
Scott Burnell
(b)(6)

From: Bonaccorso, Amy
To: Burnell, Scott; McIntyre, David; Harrington, Holly
Cc: Deavers, Ron
Sent: Fri Mar 18 09:01:57 2011
Subject: K1 Pills

What are we telling people who want to know where to get K1? If I say there is no danger, it's still a potentially weak answer because FEMA always tells people to "be prepared."

000/323

From: McIntyre, David
To: Couret, Ivonne; Brenner, Eliot
Subject: FW: urgent question
Date: Friday, March 18, 2011 12:35:00 PM

ABC heard a rumor that everything was okey-dokey and the J reactors were in "cold shutdown." I was able to kibosh that one.

From: Sciutto, Jim E. [mailto:Jim.E.Sciutto@abc.com]
Sent: Friday, March 18, 2011 12:26 PM
To: McIntyre, David
Subject: urgent question

Hi Dave, Are you able to answer an urgent question regarding Japan? I'm on (b)(6) Thanks, Jim

0001324

From: Atsuko Nameki
To: McIntyre, David
Subject: Footage of meltdown -RE: meltdown graphics
Date: Friday, March 18, 2011 12:27:42 PM

Dear David:

Thank you for your email. Understanding there is no graphic at NRC I requested, please allow me to explain briefly again exactly what I am looking for now.

We at NHK, Japanese public television, are trying to make a special program focusing on the issue of Nuclear Plant Disaster as you have seen on the TV news. In the program we are trying to explain how "MELTDOWN" happens and, in doing so, footage to show how it looks like will be very helpful.

So, what I am looking for is some footage of the meltdown experiment to show how the nuclear fuel melts or burns.

Sorry about my persistence, but, your understanding will be greatly appreciated.

Thank you very much.

Atsuko Nameki
NHK
310-822-7601
(b)(6) (Cell)

-----Original Message-----
From: McIntyre, David [mailto:David.McIntyre@nrc.gov]
Sent: Friday, March 18, 2011 9:02 AM
To: (b)(6)
Subject: meltdown graphics

NRC would not have such a graphic. I suspect any number of anti-nuclear power organizations might.

David McIntyre
NRC Public Affairs

000/325

From: Sciutto, Jim E.
To: McIntyre, David
Subject: urgent question
Date: Friday, March 18, 2011 12:26:19 PM

Hi Dave, Are you able to answer an urgent question regarding Japan? I'm on (b)(6) Thanks,
Jim

000|326

From: Burnell, Scott
To: Brenner, Eliot; Harrington, Holly
Cc: McIntyre, David
Subject: RE: MSNBC blog post -- ok to go
Date: Friday, March 18, 2011 2:05:27 PM

Tweak in RED

From: Brenner, Eliot
Sent: Friday, March 18, 2011 1:56 PM
To: Harrington, Holly
Cc: McIntyre, David; Burnell, Scott
Subject: MSNBC blog post -- ok to go

Check the last sentence in the next to last paragraph with Scott. Otherwise ready to go

Many news reports during this chaotic week have questioned the safety of U.S. nuclear power plants in the wake of the terrible events in Japan. These reports raise questions about the design of reactor containments and spent fuel pools, and of course whether our plants would be able to withstand an earthquake and tsunami like the ones that devastated Japan.

Nuclear power is a complicated, technical subject, and we naturally try to simplify it to make it understandable to the general public. Sometimes, however, simplification leads to misunderstanding, and misunderstanding causes fear.

One example was a so-called "investigative report" on MSNBC.com that ranked nuclear power plants according to their "vulnerability" to major earthquakes. The reporter concluded that the Indian Point plant, 24 miles north of New York City, was "the most vulnerable" in the nation. Instant headlines. You may have heard a local news report that your neighborhood nuclear plant ranked "on the NRC's Top Ten List" of the plants most likely to tumble in a temblor.

Let's be clear: The NRC does not rank nuclear power plants according to their vulnerability to earthquakes. This "ranking" was developed by the MSNBC.com reporter using partial information and we believe an even more partial understanding of how we evaluate plants for seismic risk. Each plant is evaluated individually according to the geology of its site, not by a "one-size-fits-all" model – therefore such rankings or comparisons are highly misleading.

We are also frequently asked whether Plant A can withstand a quake of magnitude X. The reporters always want a yes-or-no answer, but again, it's not that simple. Nuclear plants are designed to withstand a certain level of "ground shaking," to use a technical term. But the way the ground shakes in an earthquake is a factor of the magnitude and the distance from the epicenter, among other things. So we can't give a simple answer to such a simple question.

Each plant is built to the circumstances that exist at its location – including earthquakes, floods and

0001321

tsunamis. For example, at nuclear plants along the Atlantic and Gulf Coasts, the greatest water threat is hurricane storm surge, not a tsunami. Moreover, there is only one fault, near the northwest U.S. coast, that is similar to the fault in Japan, and there are no nuclear plants nearby. The closest coastal plant to that fault is well-protected against tsunami.

Over the last few years, the NRC has reassessed nuclear plants in the central and eastern United States for their vulnerability to earthquakes, using new seismic data developed by geologists. The study's preliminary work has shown that a few plants might have stronger ground motions than originally thought, although still within the plants' safety margins. These plants will do more research once more detailed analytical models are available later this year.

This is a complex issue that does not always lend itself to simple yes and no answers. Bottom line: the NRC does not rank plants on seismic risk. Plants in this country continue to operate safely and securely.

From: McIntyre, David
To: Burnell, Scott; Brenner, Eliot; Harrington, Holly
Subject: RE: MSNBC blog post -- ok to go
Date: Friday, March 18, 2011 1:59:00 PM

Tweak away. This was the sentence in Annie's talking points that I inartfully based that on:

The results of the GI-199 assessment demonstrate that
the probability of exceeding the design basis ground motion may have increased at some sites, but only
by a relatively small amount.

From: Burnell, Scott
Sent: Friday, March 18, 2011 1:57 PM
To: Brenner, Eliot; Harrington, Holly
Cc: McIntyre, David
Subject: Re: MSNBC blog post -- ok to go

Let me tweak that when I get back to my desk.

Sent from an NRC Blackberry
Scott Burnell
(b)(6)

From: Brenner, Eliot
To: Harrington, Holly
Cc: McIntyre, David; Burnell, Scott
Sent: Fri Mar 18 13:55:30 2011
Subject: MSNBC blog post -- ok to go

Check the last sentence in the next to last paragraph with Scott. Otherwise ready to go

Many news reports during this chaotic week have questioned the safety of U.S. nuclear power plants in the wake of the terrible events in Japan. These reports raise questions about the design of reactor containments and spent fuel pools, and of course whether our plants would be able to withstand an earthquake and tsunami like the ones that devastated Japan.

Nuclear power is a complicated, technical subject, and we naturally try to simplify it to make it understandable to the general public. Sometimes, however, simplification leads to misunderstanding, and misunderstanding causes fear.

One example was a so-called "investigative report" on MSNBC.com that ranked nuclear power plants according to their "vulnerability" to major earthquakes. The reporter concluded that the Indian Point plant, 24 miles north of New York City, was "the most vulnerable" in the nation. Instant headlines. You may have heard a local news report that your neighborhood nuclear plant

From: McIntyre, David
To: Brenner, Eliot; Harrington, Holly
Cc: Burnell, Scott
Subject: RE: MSNBC blog post -- ok to go
Date: Friday, March 18, 2011 1:56:00 PM

Which "nuclear regulators" are you referring to?

From: Brenner, Eliot
Sent: Friday, March 18, 2011 1:56 PM
To: Harrington, Holly
Cc: McIntyre, David; Burnell, Scott
Subject: MSNBC blog post -- ok to go

Check the last sentence in the next to last paragraph with Scott. Otherwise ready to go

Many news reports during this chaotic week have questioned the safety of U.S. nuclear power plants in the wake of the terrible events in Japan. These reports raise questions about the design of reactor containments and spent fuel pools, and of course whether our plants would be able to withstand an earthquake and tsunami like the ones that devastated Japan.

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Each plant is built to the circumstances that exist at its location – including earthquakes, floods and

From: McIntyre, David
To: Maureen Conley
Subject: RE: Nureg-1738?
Date: Friday, March 18, 2011 4:44:00 PM

I just sent you the ML, what's to hide? Remember, there may be some ultra conservative assumptions in there used for simulations, and the figures may not translate directly into "XX thousands of deaths" ...

From: Maureen Conley (b)(6)
Sent: Friday, March 18, 2011 4:18 PM
To: McIntyre, David
Subject: Re: Nureg-1738?

Thanks for the ML#. Oddly, I found in on Mothers for Peace's website. You guys aren't trying to hide it, are you!?

Maureen Conley
(b)(6)

From: "McIntyre, David" <David.McIntyre@nrc.gov>
To: Maureen Conley (b)(6)
Sent: Fri, March 18, 2011 4:11:10 PM
Subject: RE: Nureg-1738?

Very tasteful, indeed. 8-P

ML0104300660

From: Maureen Conley (b)(6)
Sent: Friday, March 18, 2011 4:03 PM
To: McIntyre, David
Subject: Nureg-1738?

Hi, Dave. In case you draw the short straw and are asked to respond to my query...I've been desperately searching for NRC's analysis of zirc cladding fires. I believe that analysis resides in Nureg-1738, which does not appear to be available on the NRC website. Is it a safeguarded document? Is there a publicly-releasable summary?

What we want to know is, aside from the probabilities (which we all know to be low, except at Fukushima right at this moment), what did NRC say about the consequences of a zirc cladding fire?

On another note, if you have workplace restrictions on viewing youtube videos, you ought to forward this link to your home email. Apparently it was put together to explain the Fukushima situation to Japanese children. It might add some levity to this terrible situation...

000328

http://www.youtube.com/watch?v=5sakN2hSVxA

Let's hope Nuclear Boy's tummy starts feeling better SOON!

Maureen Conley

(b)(6)

From: Regina Bediako
To: McIntyre, David
Subject: Information Notice?
Date: Friday, March 18, 2011 6:03:21 PM

Hi David,

Just saw the press release about the Information Notice that the NRC's been distributing to operating power plants – is this Notice something that we can also get access to, or is it just for the power plants?

Thanks!
Regina

Regina Bediako
NHK (Japan Broadcasting Corporation)
2030 M St NW, Suite 706
Washington, D.C. 20036
Office: (202) 828-5180, ext. 111/Cell (b)(6)

000|329

From: McIntyre, David
To: Tristan.Goodley@darlowsmithson.com
Subject: NRC
Date: Friday, March 18, 2011 4:46:00 PM

Tristan – for now, we must refer you to the US Embassy in Tokyo for any logistics re filming our folks in Japan. We are checking with Chuck Casto to see if he might be available.

David McIntyre
Public Affairs Officer
U.S. Nuclear Regulatory Commission
(301) 415-8206 (direct)
(202) (b)(6)
Protecting People & the Environment

000330

From: (b)(6) on behalf of Dave McIntyre
To: McIntyre, David
Subject: Fwd: MSNBC.Com story
Date: Friday, March 18, 2011 2:04:34 PM

---------- Forwarded message ----------
From: **Munson, Clifford** <Clifford.Munson@nrc.gov>
Date: Fri, Mar 18, 2011 at 1:44 PM
Subject: RE: MSNBC.Com story
To: "Sheehan, Neil" <Neil.Sheehan@nrc.gov>, "Kammerer, Annie" <Annie.Kammerer@nrc.gov>
Cc: (b)(6) "Ake, Jon" <Jon.Ake@nrc.gov>, "Stutzke, Martin" <Martin.Stutzke@nrc.gov>

Neil,

I will start working on this and turn it over to Annie when she comes in later.

Cliff
Clifford Munson, Ph.D.
Senior Level Advisor
U.S. NRC - Office of New Reactors
Division of Site and Environmental Reviews
301-415-6947
clifford.munson@nrc.gov

-----Original Message-----
From: Sheehan, Neil
Sent: Friday, March 18, 2011 1:32 PM
To: Kammerer, Annie
Cc: (b)(6) Ake, Jon; Munson, Clifford; Stutzke, Martin
Subject: FW: MSNBC.Com story

Annie,

Here's another batch of seismic-related questions. Can your group help with these? This guy wants to respond to the MSNBC.Com article. Actually, he has actually posted one piece:
http://www.dailytech.com/EDITORIAL+MSNBCcom+Report+on+US+Nuclear+Risks+Features+Many+Flaws/article21150.htm
.

Neil
Public Affairs

-----Original Message-----
From: jason.mick@dailytech.com [mailto:jason.mick@dailytech.com]
Sent: Friday, March 18, 2011 1:04 PM
To: Sheehan, Neil
Subject: RE: MSNBC.Com story

1. Does the SCDF represent a measurement of the risk of radiation RELEASE or only the risk of core damage (not accounting for secondary containment, etc.)?

2. Did an NRC spokesperson tell MSNBC's Bill Dedman that the weighted risk average was invalid and useless? He contends to us that this is the case. This seems suspicious.

3. If it was "invalid" as he claims, why would the USGS include that metric?

4. Can you explain the weighted average and how it compares to the weakest link average?

5. Ultimately would you suggest using one of the models (average, weighted, weakest link) or to combine the information from all three?

6. Were there any other factual inaccuracies or flaws in Mr. Dedman's piece you would like clarify/point out.

000331

7. Mr. Dedman infers that the plant quake risk has grown (between the 1989 and 2008 estimates) to the threshold of danger and may cross it in the next study. Is this the NRC's position?

My piece, one more time:
"EDITORIAL: MSNBC.com Report on U.S. "Nuclear Risks" Features Many Flaws"
http://www.dailytech.com/EDITORIAL+MSNBCcom+Report+on+US+Nuclear+Risks+Features+Many+Flaws/article21150.htm

Thank you in advance!!!!

Cheers,
Jason

On Fri, 18 Mar 2011 12:56:56 -0400, "Sheehan, Neil" <Neil.Sheehan@nrc.gov>
wrote:
> Can you do me a favor and send me those separately?
>
>
>
> -----Original Message-----
> From: jason.mick@dailytech.com [mailto:jason.mick@dailytech.com]
> Sent: Friday, March 18, 2011 12:46 PM
> To: Sheehan, Neil
> Subject: RE: MSNBC.Com story
>
> Hi Neil,
> Thank you for the info! It's greatly appreciated.
>
> Can you possibly send me answers to my other questions by tomorrow? I'm
> trying to run a followup and I really need that info to get the accurate
> facts out there.
>
> Thank you!!!!
>
> Cheers,
> Jason
>
>
> On Fri, 18 Mar 2011 11:57:06 -0400, "Sheehan, Neil"
<Neil.Sheehan@nrc.gov>
> wrote:
>> Jason,
>>
>> Here are some questions we responded to yesterday. They may answer your
>> questions:
>>
>> Q.) Overall, how would the NRC characterize this? A quirk of numbers? A
>> serious concern?
>>
>> The study is still under way and it is too early to predict the final
>> outcome. However, the NRC staff has determined there is no immediate
> safety
>> concern and that overall seismic risk estimates remain small. If at any
>> time the NRC determines that an immediate safety concern exists, action
> to
>> address the issue will be taken. The NRC is focused on assuring safety
>> during even very rare and extreme events. Therefore, the agency has
>> determined that assessment of updated seismic hazards and plant
> performance
>> should continue.
>>
>> Q.) Could someone describe the study and what it factored in – plant
>> design, soils, previous quakes, etc.?
>>
>> The study considers the factors that impact estimates of both the
seismic
>> hazard (i.e., ground-shaking levels) at the site and the plants'
>> resistance to earthquakes (mathematically represented by the plant level
>> fragility curve). Previous quakes, the tectonic environment and the
soils
>> that underlie the site are all used in the development of the
>> ground-shaking estimates used in the analyses. Plant design and the
> seismic
>> resistance of the important structures, systems and components are all

> used
>> in the development of plant-level fragility curves.
>>
>> Q.) Can someone explain "seismic curve" and "plant level fragility
>> curve?" (Assuming they're important)
>>
>> A seismic curve is a graphical representation of seismic hazard. Seismic
>> hazard in this context is the highest level of ground motion expected to
>> occur (on average) at a site over different periods of time. Plant-level
>> fragility is the probability of damage to plant structures, systems and
>> components as a function of ground-shaking levels.
>>
>> Q.) Can someone explain the "weakest link model?" (Assuming it's
>> important)
>>
>> The weakest link model is a method for evaluating the importance of
>> different frequencies of ground vibration to the overall plant
> performance.
>> The model and its details are not integral to understanding the
> fundamental
>> conclusions of the study.
>>
>> Q.) What would constitute fragility at a plant?
>>
>> Fragility is a term that relates the probability of failure of an
>> individual structure, system or component to the level of seismic
shaking
>> it experiences. Plant-level fragility is the probability of damage to
> sets
>> of plant structures, systems and components as a function of
> ground-shaking
>> levels.
>>
>> Neil Sheehan
>> NRC Public Affairs
>> (b)(6)
>>
>>
>>
>> -----Original Message-----
>> From: jason.mick@dailytech.com [mailto:jason.mick@dailytech.com]
>> Sent: Friday, March 18, 2011 11:32 AM
>> To: Sheehan, Neil
>> Subject: re: MSNBC.Com story
>>
>> Hi Neil,
>>
>> Thank you for the response!! In my piece, I believe I capture this
>> distinction accurately, as I write that the study was performed by the
> U.S.
>> Geological Survey (USGS) on behalf of the NRC.
>>
>> I wrote a critique on MSNBC piece because it was very
> sensational/alarmist
>> in tone and goes into a lengthy discussion of who's most "at risk" and
> only
>> at the end do they mention the risk was within the acceptable levels.
By
>> contrast my story puts that right up front and also points out some
other
>> potential flaws of the MSNBC piece.
>>
>>
>
http://www.dailytech.com/EDITORIAL+MSNBCcom+Report+on+US+Nuclear+Risks+Features+Many+Flaws/article21150.htm

>>
>> To that end, I do have some specific questions on the study. If you
> cannot
>> answer them, please forward them to an appropriate colleague at the USGS
>> who would be knowledgeable wrt the study. Please see question #3 as it
>> applies more directly to your team.
>>
>> These questions were:
>>
>> 1. The report clearly seems to state clearly that seismic core damage
>> frequency (SCDF) does not correspond directly to release of radiation

and
>> that they did not have enough info to make a proper assessment of public
>> dosage risk or large early release frequency.
>>
>> In the MSNBC report they state that the estimate (SCDF) was an
assessment
>> of the risk of the public being exposed to radiation. This seems to be
> in
>> direct contradiction with what the report says (that they cannot assess
> the
>> risk of public exposure and that the SCDF is the risk of core damage,
not
>> public exposure).
>>
>> 2. In the report their were several risk estimates, based on the
various
>> ground vibration frequency scenarios -- 1 Hz... 10 Hz. One estimate
> takes
>> the max of these (the "Weakest Link" model). Can I get some
> clarification
>> on what exactly the differences between these models are (outside of the
>> direct calculation methods mentioned in the paper), and whether one is
> more
>> correct than the others?
>>
>> 3. In our email dialogue following my piece, Mr. Dedman (the MSNBC
>> reporter) told me that the NRC told him specifically to use the weaklest
>> link figure. He also said he was told by the NRC that the weighted
> figure
>> (another model) was useless and invalid.
>>
>> I just got off the phone with a colleague of yours and it sounded like
> this
>> claim was doubtful. But I wanted to verify it.
>>
>> Can you speak with the PR team member who talked with Mr. Dedman and
> check
>> whether the NRC told him this.
>>
>> I just had a terrific discussion with one of your team members and he
>> explained the frustrations about Mr. Dedman's story. When I mentioned
> that
>> I felt there was factual inaccuracies he told me, that "There were
> numeous
>> inaccuracies in that story."
>>
>> And he said, "We don't rank plants like that and its inappropriate to do
> so
>> on a basis like that."
>>
>> The feeling I got was that the NRC did not at all intend MSNBC/Dedman to
>> sensationalize and exploit the story in the way he did. If you have any
>> comments you would like to add to the above ones, I'd appreciate it.
>>
>> And I hate to say it, but I missed your colleagues name, so I was
> wondering
>> whether you can check on that for me, so I can properly attribute it.
He
>> said he's in the office with you, so it shouldn't be hard to find (he's
> on
>> the same number as you!).
>>
>> I think your team and I both share a desire to get the CORRECT story out
>> here. From my perspective the correct story is that this risk
assessment
>> was done and the critical conclusion was that it showed we're still
>> relatively safe. In light of the Senate demands for reevaluation, etc.,
> I
>> think this is of the UTMOST importance to share the proper story with
our
>> readers.
>>
>> Both for that reason and from a personal perspective, I really
appreciate
>> your help and thank you for your reply!!
>>
>> Sincerely,

>> Jason
>> -------------------
>> Jason R. Mick
>> Senior News Editor
>> DailyTech LLC
>> http://www.dailytech.com/
>> Email: jason.mick@dailytech.com
>> (b)(6)
>> AIM: jasonatdailytech
>>
>> On Fri, 18 Mar 2011 09:48:05 -0400, "Sheehan, Neil"
> <Neil.Sheehan@nrc.gov>
>> wrote:
>>> Jason,
>>>
>>> The MSNBC story
>>> (http://www.msnbc.msn.com/id/42103936/ns/world_news-asiapacific/) has
to
>> do
>>> with a seismic risk ranking it created. It is not the result of an NRC
>>> review. The NRC does not rank plants by seismic risk.
>>>
>>> The objective of the NRC study was to perform a conservative,
>>> screening-level assessment of earthquake risk. The NRC results to date
>>> should not be interpreted as definitive estimates of seismic risk. The
>>> nature of the information used to make these estimates is useful only
as
>> a
>>> screening tool.
>>>
>>> Currently operating nuclear power plants in the U.S. remain safe, with
> no
>>> need for immediate action. This determination is based on NRC staff
>> reviews
>>> of updated seismic hazard information and the conclusions of the
>> screening
>>> panel. Existing plans were designed with considerable margin to be able
>> to
>>> withstand the ground motions from the largest earthquake expected in
the
>>> area around the plant.
>>>
>>> Neil Sheehan
>>> NRC Public Affairs
>>> (b)(6)
>>>
>>>
>>>
>>>
>>>
>>> From: Royer, Deanna
>>> Sent: Friday, March 18, 2011 8:46 AM
>>> To: Couret, Ivonne
>>> Subject: Media - Question
>>>
>>> Jason Mick
>>> Daily Tech
>>> jason.mick@dailytech.com<mailto:jason.mick@dailytech.com>
>>> 248-978-5941
>>> Re: Risk of plants study referred to by MSNBC
>>>
>>> Deanna Royer
>>> Contract Secretary
>>> 415-8200

Wagner, Katie

From: Wagner, Katie
Sent: Friday, March 18, 2011 2:36 PM
To: Lee, Richard
Subject: FW: Japanese TV request for Snadia video footage. FW: NHK-TV, Japan - Sandia OECD Lower Head Failure Project - final report

Status "complete"?

-----Original Message-----
From: Gibson, Kathy
Sent: Friday, March 18, 2011 11:14 AM
To: Wagner, Katie
Subject: Fw: Japanese TV request for Snadia video footage. FW: NHK-TV, Japan - Sandia OECD Lower Head Failure Project - final report

----- Original Message -----
From: Sheron, Brian
To: Sangimino, Donna-Marie; Uhle, Jennifer; Gibson, Kathy
Cc: Lee, Richard; Valentin, Andrea; Kardaras, Tom; Dehn, Jeff; Weber, Michael
Sent: Fri Mar 18 11:13:18 2011
Subject: Re: Japanese TV request for Snadia video footage. FW: NHK-TV, Japan - Sandia OECD Lower Head Failure Project - final report

I have no objection, since OECD cooperative research program data is made available 3 years later.

Please notify OPA and IRC ET that we are releasing it.

----- Original Message -----
From: Sangimino, Donna-Marie
To: Sheron, Brian; Uhle, Jennifer; Gibson, Kathy
Cc: Lee, Richard; Valentin, Andrea; Kardaras, Tom; Dehn, Jeff
Sent: Fri Mar 18 10:18:27 2011
Subject: FW: Japanese TV request for Snadia video footage. FW: NHK-TV, Japan - Sandia OECD Lower Head Failure Project - final report

All,

This is a request from NEA about video footage of an OECD/NEA program from ~10 years ago. It was NRC funded, Sandia hosted. The video is of a vessel being pressurized and heated until it fails. NEA wants to release the video to a Japanese TV station, and believes it is publically releasable at this point. They're looking to the NRC for a tacit approval at this point.

Jeff talked to Richard, and he believes there isn't a technical reason to decline the request. If you have an opinion on this, please forward as soon as possible. Jeff can provide the video or a link and password to view the video if desired.

000|332

We would propose forwarding this request to the Ops Center management with no objection to NEA's request.

Thank you,

Donna-Marie Sangimino

From: Diane.JACKSON@oecd.org [mailto:Diane.JACKSON@oecd.org]
Sent: Friday, March 18, 2011 7:28 AM
To: Dehn, Jeff; Sangimino, Donna-Marie
Cc: Janice.DUNNLEE@oecd.org; Javier.REIG@oecd.org
Subject: Japanese TV request for Snadia video footage. FW: NHK-TV, Japan - Sandia OECD Lower Head Failure Project - final report

Hello Jeff –

A Japanese news station would like to obtain footage and report of the Oct 23 2000 experiment the OECD had requested Sandia to conduct. Please see below the news release from Sandia.

http://www.sandia.gov/media/NewsRel/NR2000/vessel.htm

In the e-mail below, the video is identified from the secure NEA website (and information to access it).

Bottom line, the data from the project is now publically available, but there is a question if video footage is included or not.

Before making any decision, the NEA would like to check with the NRC.

Best regards,

Diane Jackson, Nuclear Safety Specialist
Nuclear Safety Division, OECD Nuclear Energy Agency (NEA)
Tel.: +33 (0)1 45 24 10 55, Diane.Jackson@oecd.org

From: GAS Serge, NEA/RE
Sent: Friday, March 18, 2011 12:03
To: DUNN LEE Janice, NEA; JACKSON Diane, NEA/SURN
Cc: CLAPPER Maureen [United States]; STANFORD Benjamin, NEA/RE
Subject: FW: NHK-TV, Japan - Sandia OECD Lower Head Failure Project - final report

Hello Janice and Diane,

Please see below – I assume you can download the video from this link (Ben will otherwise advise how to proceed).

http://www.oecd-nea.org/press/accredited/video/OLHF-2.mpg

Please use the following username and password:

Username: (b)(6)

Password:

Could you please make sure that NRC has no objection to the release of the footage?

Thanks in advance.

Best regards,

Serge

From: GAS Serge, NEA/RE
Sent: Friday, March 18, 2011 11:56
To: 'KAMADA TOSHIHIKO'

Cc: DUNN LEE Janice, NEA; YOSHIMURA Uichiro, NEA/SRAN; REIG Javier, NEA/SURN
Subject: NHK-TV, Japan - Sandia OECD Lower Head Failure Project - final report

Dear Toshi,

I am being told that we could be entitled to send it but we don't want to do that without the Japanese government's green light and the US NRC's since they were the main funding organisation at the time. We are starting now to see with the US NRC is it is fine with them. If you could look on your side. Thanks a lot in advance.

Best regards,

Serge

From: KAMADA TOSHIHIKO [mailto:toshihiko.kamada@mofa.go.jp]
Sent: Friday, March 18, 2011 11:22
To: STANFORD Benjamin, NEA/RE; GAS Serge, NEA/RE
Cc: YOSHIMURA Uichiro, NEA/SRAN
Subject: RE: FW: NHK-TV, Japan - Sandia OECD Lower Head Failure Project - final report

Dear Mr. Benjamin Stanford and Serge,

Thank you very much for your information!

May I ask you a question?

Whose possession is the contents and data of this video and the report?

(member country?, project participants?, NEA? or others?)

Is it possible to think that NEA has right to decide whether this should be open or not?

Best regards,

Toshi

///

Toshihiko KAMADA

First Secretary (Science and Technology)

Permanent Delegation of Japan to the OECD

TEL: +33 (0)1 53 76 61 81

FAX: +33 (0)1 45 63 05 44

E-mail: toshihiko.kamada@mofa.go.jp <mailto:toshihiko.kamada@deljp-ocde.fr>

///

経済協力開発機構日本政府代表部

一等書記官（科学技術担当）

鎌　田　俊　彦

///

From: Benjamin.STANFORD@oecd.org [mailto:Benjamin.STANFORD@oecd.org]
Sent: Friday, March 18, 2011 10:50 AM
To: Serge.GAS@oecd.org; KAMADA TOSHIHIKO
Cc: Uichiro.YOSHIMURA@oecd.org
Subject: RE: FW: NHK-TV, Japan - Sandia OECD Lower Head Failure Project - final report

Dear Mr. Kamada,

You can download the video from this link.

http://www.oecd-nea.org/press/accredited/video/OLHF-2.mpg

Please use the following username and password:

Username: (b)(6)

Password: (b)(6)

Please do not share this username and password. We will provide a separate one to the journalists if the video is to be shared.

Please contact me should you have any technical difficulties.

Best regards,

Benjamin Stanford
Webmaster
OECD Nuclear Energy Agency (NEA)
Tel.: +33 (0)1 45 24 10 09
benjamin.stanford@oecd.org <mailto:benjamin.stanford@oecd.org>
www.oecd-nea.org <http://www.oecd-nea.org>

From: GAS Serge, NEA/RE
Sent: Friday, March 18, 2011 10:41 AM
To: KAMADA Toshihiko [Company Name]
Cc: YOSHIMURA Uichiro, NEA/SRAN; STANFORD Benjamin, NEA/RE
Subject: FW: FW: NHK-TV, Japan - Sandia OECD Lower Head Failure Project - final report
Importance: High

Dear Toshi,

Please see the exchange of messages below. In fact we have found the footage but the video could have some impact on the public so I think you should have a look before we pass it to the TV channel. Our webmaster Ben Stanford is going to send it to you very soon.

Best regards,

Serge

From: yuhong hiro koh (b)(6)
Sent: Friday, March 18, 2011 10:15
To: GAS Serge, NEA/RE
Cc: HUERTA Alejandro, NEA/SURN; TURCHI Elodie, PAC/WASH; RUMPF Matthias, PAC/WASH; FISHER Helen, PAC/COM
Subject: Re: FW: NHK-TV, Japan - Sandia OECD Lower Head Failure Project - final report

Mr. Serge Gas,

Thank you very much for this.
Can you please tell me if you have a video footage of the experiment?
If you do, I would like to send someone from NHK Europe to retrieve it today.
I have contacted Sandia, but they unfortunately do not want to help in this matter
and are not lifting a finger. Thank you again.

Hiro

On 3/18/2011 1:55 AM, Serge.GAS@oecd.org wrote:

Dear Hiro,

This is the final report of the OECD (Sandia) Lower Head Failure project run between 2000 and 2002.

The final report is available (downloadable) on our public website:

http://www.oecd-nea.org/nsd/docs/2002/csni-r2002-27.pdf

We cannot send it since it is 570 pages and about 40 Mbytes, without the appendices.

These experiments were to assess resistance of reactor vessel in case of core melt down.

Our expert Alejandro Huerta (copied, (b)(6) can help you to understand the report if you need it.

Best regards,

Mr. Serge Gas

Head, Central Secretariat, External Relations and Public Affairs

OECD Nuclear Energy Agency

Tel. : +33 1 45 24 10 10

Fax: +33 1 45 24 11 15

Le Seine Saint Germain, 12 Boulevard des Iles, 92130 Issy-les-Moulineaux, France

-----Original Message-----

From: yuhong hiro koh (b)(6)

Sent: Thursday, March 17, 2011 3:35 PM

To: TURCHI Elodie, PAC/WASH

Subject: NHK-TV, Japan

Dear Elodie,

Thank you for accommodating me over the phone just now.

We would like to obtain FOOTAGE and REPORT of the

2000, Oct 23 experiment the OECD had requested Sandia to

conduct. Please see below the news release from Sandia.

http://www.sandia.gov/media/NewsRel/NR2000/vessel.htm

I don't have a name of the experiment, but it was to see how

string the reactor vessels are to pressure and and blasts.

Again, we have a Friday night deadline for the special edition

program we are putting together on the situation at Fukushima.

I would sincerely and greatly appreciate your help.

Thank you,

Hiro

--

Yuhong Hiro Koh

NHK, Science& Nature

Tel: US ++1 310-502-4506

Fax: US ++1 310-539-3021

e: s02709-koh@nhk.or.jp

(b)(6)

Homepage: http://www.nhk.or.jp

English: http://www.nhk.or.jp/nhkworld/index.html

--

Yuhong Hiro Koh
NHK, Science & Nature
Tel: US ++1 310-502-4506
Fax: US ++1 310-539-3021
e: s02709-koh@nhk.or.jp
(b)(6)
Homepage: http://www.nhk.or.jp
English: http://www.nhk.or.jp/nhkworld/index.html

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person to whom it is addressed. If you are not the intended recipient/addressee, any use of the Email and/or its contents, including, but not limited to, dissemination, distribution or copying is strictly prohibited and may be unlawful, and you must not take any action in reliance on it. If you receive this Email in error, please immediately notify the sender and delete the original message and any copies of it from your computer system. We deny any liability for damages resulting from the use of this Email by the unintended recipient, including the recipient in error.

Wagner, Katie

From: Wagner, Katie
Sent: Friday, March 18, 2011 4:15 PM
To: Dehn, Jeff
Subject: RE: Japanese TV request for Snadia video footage. FW: NHK-TV, Japan - Sandia OECD Lower Head Failure Project - final report

Thanks Jeff - Katie

-----Original Message-----
From: Dehn, Jeff
Sent: Friday, March 18, 2011 4:07 PM
To: Wagner, Katie
Subject: FW: Japanese TV request for Snadia video footage. FW: NHK-TV, Japan - Sandia OECD Lower Head Failure Project - final report

Katie,

I just got an OK from the Ops Center and replied to NEA approving the release. Both are attached. Please consider this item closed.

Thanks,
Jeff

-----Original Message-----
From: Lee, Richard
Sent: Friday, March 18, 2011 3:00 PM
To: Wagner, Katie
Cc: Dehn, Jeff
Subject: FW: Japanese TV request for Snadia video footage. FW: NHK-TV, Japan - Sandia OECD Lower Head Failure Project - final report

Katie:

This closed out item 14. Please advise Jeff to respond to NEA positively,

Thanks, Richard

-----Original Message-----
From: Sheron, Brian
Sent: Friday, March 18, 2011 11:13 AM
To: Sangimino, Donna-Marie; Uhle, Jennifer; Gibson, Kathy
Cc: Lee, Richard; Valentin, Andrea; Kardaras, Tom; Dehn, Jeff; Weber, Michael
Subject: Re: Japanese TV request for Snadia video footage. FW: NHK-TV, Japan - Sandia OECD Lower Head Failure Project - final report

I have no objection, since OECD cooperative research program data is made available 3 years later.

Please notify OPA and IRC ET that we are releasing it.

----- Original Message -----
From: Sangimino, Donna-Marie

000\333

To: Sheron, Brian; Uhle, Jennifer; Gibson, Kathy
Cc: Lee, Richard; Valentin, Andrea; Kardaras, Tom; Dehn, Jeff
Sent: Fri Mar 18 10:18:27 2011
Subject: FW: Japanese TV request for Snadia video footage. FW: NHK-TV, Japan - Sandia OECD Lower Head Failure Project - final report

All,

This is a request from NEA about video footage of an OECD/NEA program from ~10 years ago. It was NRC funded, Sandia hosted. The video is of a vessel being pressurized and heated until it fails. NEA wants to release the video to a Japanese TV station, and believes it is publically releasable at this point. They're looking to the NRC for a tacit approval at this point.

Jeff talked to Richard, and he believes there isn't a technical reason to decline the request. If you have an opinion on this, please forward as soon as possible. Jeff can provide the video or a link and password to view the video if desired.

We would propose forwarding this request to the Ops Center management with no objection to NEA's request.

Thank you,

Donna-Marie Sangimino

From: Diane.JACKSON@oecd.org [mailto:Diane.JACKSON@oecd.org]
Sent: Friday, March 18, 2011 7:28 AM
To: Dehn, Jeff; Sangimino, Donna-Marie
Cc: Janice.DUNNLEE@oecd.org; Javier.REIG@oecd.org
Subject: Japanese TV request for Snadia video footage. FW: NHK-TV, Japan - Sandia OECD Lower Head Failure Project - final report

Hello Jeff –

A Japanese news station would like to obtain footage and report of the Oct 23 2000 experiment the OECD had requested Sandia to conduct. Please see below the news release from Sandia.

http://www.sandia.gov/media/NewsRel/NR2000/vessel.htm

In the e-mail below, the video is identified from the secure NEA website (and information to access it).

Bottom line, the data from the project is now publically available, but there is a question if video footage is included or not.

Before making any decision, the NEA would like to check with the NRC.

Best regards,

Diane Jackson, Nuclear Safety Specialist Nuclear Safety Division, OECD Nuclear Energy Agency (NEA)
Tel.: +33 (0)1 45 24 10 55, Diane.Jackson@oecd.org

From: GAS Serge, NEA/RE
Sent: Friday, March 18, 2011 12:03
To: DUNN LEE Janice, NEA; JACKSON Diane, NEA/SURN
Cc: CLAPPER Maureen [United States]; STANFORD Benjamin, NEA/RE
Subject: FW: NHK-TV, Japan - Sandia OECD Lower Head Failure Project - final report

Hello Janice and Diane,

Please see below – I assume you can download the video from this link (Ben will otherwise advise how to proceed).

http://www.oecd-nea.org/press/accredited/video/OLHF-2.mpg

Please use the following username and password:

Username (b)(6)

Password:

Could you please make sure that NRC has no objection to the release of the footage?

Thanks in advance.

Best regards,

Serge

From: GAS Serge, NEA/RE
Sent: Friday, March 18, 2011 11:56
To: 'KAMADA TOSHIHIKO'
Cc: DUNN LEE Janice, NEA; YOSHIMURA Uichiro, NEA/SRAN; REIG Javier, NEA/SURN
Subject: NHK-TV, Japan - Sandia OECD Lower Head Failure Project - final report

Dear Toshi,

I am being told that we could be entitled to send it but we don't want to do that without the Japanese government's green light and the US NRC's since they were the main funding organisation at the time. We are starting now to see with the US NRC is it is fine with them. If you could look on your side. Thanks a lot in advance.

Best regards,

Serge

From: KAMADA TOSHIHIKO [mailto:toshihiko.kamada@mofa.go.jp]
Sent: Friday, March 18, 2011 11:22
To: STANFORD Benjamin, NEA/RE; GAS Serge, NEA/RE
Cc: YOSHIMURA Uichiro, NEA/SRAN
Subject: RE: FW: NHK-TV, Japan - Sandia OECD Lower Head Failure Project - final report

Dear Mr. Benjamin Stanford and Serge,

Thank you very much for your information!

May I ask you a question?

Whose possession is the contents and data of this video and the report?

(member country?, project participants?, NEA? or others?)

Is it possible to think that NEA has right to decide whether this should be open or not?

Best regards,

Toshi

//

Toshihiko KAMADA

First Secretary (Science and Technology)

Permanent Delegation of Japan to the OECD

TEL: +33 (0)1 53 76 61 81

FAX: +33 (0)1 45 63 05 44

E-mail: toshihiko.kamada@mofa.go.jp <mailto:toshihiko.kamada@deljp-ocde.fr>

//

経済協力開発機構日本政府代表部

一等書記官（科学技術担当）

鎌　田　俊　彦

//

From: Benjamin.STANFORD@oecd.org [mailto:Benjamin.STANFORD@oecd.org]
Sent: Friday, March 18, 2011 10:50 AM
To: Serge.GAS@oecd.org; KAMADA TOSHIHIKO
Cc: Uichiro.YOSHIMURA@oecd.org
Subject: RE: FW: NHK-TV, Japan - Sandia OECD Lower Head Failure Project - final report

Dear Mr. Kamada,

You can download the video from this link.

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Please use the following username and password:

Username (b)(6)

Password:

Please do not share this username and password. We will provide a separate one to the journalists if the video is to be shared.

Please contact me should you have any technical difficulties.

Best regards,

Benjamin Stanford
Webmaster
OECD Nuclear Energy Agency (NEA)
Tel.: +33 (0)1 45 24 10 09
benjamin.stanford@oecd.org <mailto:benjamin.stanford@oecd.org>
www.oecd-nea.org <http://www.oecd-nea.org>

From: GAS Serge, NEA/RE
Sent: Friday, March 18, 2011 10:41 AM
To: KAMADA Toshihiko [Company Name]
Cc: YOSHIMURA Uichiro, NEA/SRAN; STANFORD Benjamin, NEA/RE
Subject: FW: FW: NHK-TV, Japan - Sandia OECD Lower Head Failure Project - final report
Importance: High

Dear Toshi,

Please see the exchange of messages below. In fact we have found the footage but the video could have some impact on the public so I think you should have a look before we pass it to the TV channel. Our webmaster Ben Stanford is going to send it to you very soon.

Best regards,

Serge

From: yuhong hiro koh (b)(6)
Sent: Friday, March 18, 2011 10:15
To: GAS Serge, NEA/RE
Cc: HUERTA Alejandro, NEA/SURN; TURCHI Elodie, PAC/WASH; RUMPF Matthias, PAC/WASH; FISHER Helen, PAC/COM
Subject: Re: FW: NHK-TV, Japan - Sandia OECD Lower Head Failure Project - final report

Mr. Serge Gas,

Thank you very much for this.
Can you please tell me if you have a video footage of the experiment?
If you do, I would like to send someone from NHK Europe to retrieve it today.
I have contacted Sandia, but they unfortunately do not want to help in this matter and are not lifting a finger.
Thank you again.

Hiro

On 3/18/2011 1:55 AM, Serge.GAS@oecd.org wrote:

Dear Hiro,

This is the final report of the OECD (Sandia) Lower Head Failure project run between 2000 and 2002.

The final report is available (downloadable) on our public website:

http://www.oecd-nea.org/nsd/docs/2002/csni-r2002-27.pdf

We cannot send it since it is 570 pages and about 40 Mbytes, without the appendices.

These experiments were to assess resistance of reactor vessel in case of core melt down.

Our expert Alejandro Huerta (copied, (b)(6) can help you to understand the report if you need it.

Best regards,

Mr. Serge Gas

Head, Central Secretariat, External Relations and Public Affairs

OECD Nuclear Energy Agency

Tel. : +33 1 45 24 10 10

Fax: +33 1 45 24 11 15

Le Seine Saint Germain, 12 Boulevard des Iles, 92130 Issy-les-Moulineaux, France

-----Original Message-----

From: yuhong hiro koh (b)(6)

Sent: Thursday, March 17, 2011 3:35 PM

To: TURCHI Elodie, PAC/WASH

Subject: NHK-TV, Japan

Dear Elodie;

Thank you for accommodating me over the phone just now.

We would like to obtain FOOTAGE and REPORT of the

2000, Oct 23 experiment the OECD had requested Sandia to

conduct. Please see below the news release from Sandia.

http://www.sandia.gov/media/NewsRel/NR2000/vessel.htm

I don't have a name of the experiment, but it was to see how

string the reactor vessels are to pressure and and blasts.

Again, we have a Friday night deadline for the special edition

program we are putting together on the situation at Fukushima.

I would sincerely and greatly appreciate your help.

Thank you,

Hiro

--

Yuhong Hiro Koh

NHK, Science& Nature

Tel: US ++1 310-502-4506

Fax: US ++1 310-539-3021

e: s02709-koh@nhk.or.jp

(b)(6)

Homepage: http://www.nhk.or.jp

English: http://www.nhk.or.jp/nhkworld/index.html

--
Yuhong Hiro Koh
NHK, Science & Nature
Tel: US ++1 310-502-4506
Fax: US ++1 310-539-3021
e: s02709-koh@nhk.or.jp
(b)(6)
Homepage: http://www.nhk.or.jp
English: http://www.nhk.or.jp/nhkworld/index.html

From: Virgilio, Rosetta
To: Leeds, Eric
Subject: RE: ACTION: NGA Center in DC Requests NRC Expert Speaker for 3/22 or 3/23 and 4/4
Date: Friday, March 18, 2011 1:44:43 PM

I see! Best of luck, Eric. We've got time to work this out.

From: Leeds, Eric
Sent: Friday, March 18, 2011 1:26 PM
To: Virgilio, Rosetta
Subject: RE: ACTION: NGA Center in DC Requests NRC Expert Speaker for 3/22 or 3/23 and 4/4

Webinar. I may be in Japan on April 4th ☺.... Too far out for me to plan right now...

Eric J. Leeds, Director
Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
301-415-1270

From: Virgilio, Rosetta
Sent: Friday, March 18, 2011 1:14 PM
To: Leeds, Eric; Johnson, Michael; Sheron, Brian; Haney, Catherine
Cc: Dorman, Dan; Santiago, Patricia; Williams, Donna; Wertz, Trent; Piccone, Josephine; Jackson, Deborah; Turtil, Richard; Deegan, George; Miller, Charles; Moore, Scott; Camper, Larry
Subject: RE: ACTION: NGA Center in DC Requests NRC Expert Speaker for 3/22 or 3/23 and 4/4

Thank you, Eric – Which request are you addressing: the Webinar next week or April 4 conference?

From: Leeds, Eric
Sent: Friday, March 18, 2011 1:08 PM
To: Virgilio, Rosetta; Johnson, Michael; Sheron, Brian; Haney, Catherine
Cc: Dorman, Dan; Santiago, Patricia; Williams, Donna; Wertz, Trent; Piccone, Josephine; Jackson, Deborah; Turtil, Richard; Deegan, George; Miller, Charles; Moore, Scott
Subject: RE: ACTION: NGA Center in DC Requests NRC Expert Speaker for 3/22 or 3/23 and 4/4

I am willing and would use our briefing material from the Commission meeting for the presentation. The problem is that I won't know my availability until the day of. Maybe the day before.

Eric J. Leeds, Director
Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
301-415-1270

From: Virgilio, Rosetta
Sent: Friday, March 18, 2011 12:38 PM
To: Johnson, Michael; Leeds, Eric; Sheron, Brian; Haney, Catherine
Cc: Dorman, Dan; Santiago, Patricia; Williams, Donna; Wertz, Trent; Piccone, Josephine; Jackson, Deborah; Turtil, Richard; Deegan, George; Miller, Charles; Moore, Scott

000334

Subject: ACTION: NGA Center in DC Requests NRC Expert Speaker for 3/22 or 3/23 and 4/4
Importance: High

All – Bob Nelson suggested I contact you directly, as you have been designated as NRC Communicators, relative to two requests below from the National Governors Association.

I told Greg Dierkers that NRC staff is pretty well stretched and might not be available to participate in next week's meeting, but I would put the request forward. I also offered that NRC is planning to hold a public Commission meeting Monday, 3/21, which will be Web streamed, and suggested this might satisfy their needs at this time. I told Greg I would send him the details when available. He understood we were pretty busy, indicating FEMA was unable to participate in the NGA meeting.

Please advise whether your schedule can support such a meeting – I would like to close the loop with Greg by COB this/Friday afternoon. Thanks much for your consideration.

Rosetta O. Virgilio
Senior Liaison Project Manager
Intergovernmental Liaison Branch
U.S. Nuclear Regulatory Commission
11545 Rockville Pike - T-8F42
Rockville, MD 20852-2738
301-415-2367
Rosetta.Virgilio@nrc.gov

From: Virgilio, Rosetta
To: 'gdierkers@NGA.ORG' <gdierkers@NGA.ORG>
Sent: Thu Mar 17 17:03:28 2011
Subject: Re: NGA Center NRC expert speaker requests

Thank you, Greg; I will followup and get back to you.

Sent from an NRC Blackberry
Rosetta O. Virgilio
(b)(6)

From: Dierkers, Gregory <gdierkers@NGA.ORG>
To: Virgilio, Rosetta
Cc: Gander, Sue <sgander@NGA.ORG>; MacLellan, Thomas <TMaclellan@NGA.ORG>; Ferro, Carmen <CFerro@NGA.ORG>
Sent: Thu Mar 17 16:36:04 2011
Subject: NGA Center NRC expert speaker requests

Hi Rosetta,

Thanks for your time today. We appreciate you identifying someone from the NRC to support the NGA Center's outreach to states during this busy time.

As we discussed we would like to invite the NRC to join us for **two upcoming events -- a webinar next week and a conference in early April -- to brief governors' advisors on the Japanese situation and the implications for US plants**. The events are:

1) **A webinar with governors' security and energy advisors.** NGA Center staff is planning to host a conference call next week (Tuesday 3/21 or Wednesday 3/22) to provide senior state officials with an update on the Japan situation and to answer questions as to the operations of US plants, including regulations, plant security/safety, and the emergency preparedness efforts at the US nuclear fleet. <u>We would ask that an NRC expert join the webinar remotely; the webinar would last for 1 hour.</u>

2) **An in-person speaker at a governors' energy advisors meeting.** NGA Center's *Governors' Energy Advisors Policy Institute* on April 4th in Arlington, Virginia. The focus of the April 4th Institute is to provide a 'Technology 101' briefing for governors senior energy advisors. <u>We would invite the NRC to attend in-person on April 4th from 1:45pm to 4:15pm. We would ask for a 10-15 minute presentation on the situation in Japan, the state of nuclear technology and regulations in the US, and the implications for states from the Japanese crisis. Attached is a draft agenda.</u>

Thanks for considering both of these requests.

Sincerely,

Greg Dierkers
Program Director – Energy and Transportation
NGA Center for Best Practices
Environment, Energy and Transportation Division
202-624-7789
gdierkers@nga.org

From: Droggitis, Spiros
To: Leeds, Eric; Johnson, Michael; Sheron, Brian
Cc: Weber, Michael; Batkin, Joshua; HOO Hoc; Taylor, Renee; Flory, Shirley; Powell, Amy; Virgilio, Martin; Riley (OCA), Timothy; Belmore, Nancy; Schmidt, Rebecca; Borchardt, Bill; Dorman, Dan; Haney, Catherine; Shane, Raeann
Subject: RE: Phone Congressional Liaison Team Briefing - Latest schedule
Date: Friday, March 18, 2011 1:45:28 PM

Great, thanks, so I guess we are all set with the schedule below. We can come up with someone for March 25 next week.

From: Leeds, Eric
Sent: Friday, March 18, 2011 1:27 PM
To: Droggitis, Spiros; Haney, Catherine; Dorman, Dan
Cc: Weber, Michael; Batkin, Joshua; HOO Hoc; Taylor, Renee; Flory, Shirley; Powell, Amy; Virgilio, Martin; Riley (OCA), Timothy; Belmore, Nancy; Schmidt, Rebecca; Johnson, Michael; Sheron, Brian; Borchardt, Bill
Subject: RE: Phone Congressional Liaison Team Briefing - Latest schedule

Happy to be here – proud to serve. I'll take the meetings.

Eric J. Leeds, Director
Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
301-415-1270

March 18 – Mike Johnson
March 19 – Eric Leeds
March 20 – Eric Leeds
March 21 – Brian Sheron
March 22 – Mike Johnson
March 23 – Brian Sheron
March 24 – Brian Sheron
March 25 –

Dial-in: 1-800-593-7189
Leader passcode: (b)(6)
Participant passcode:

From: Schmidt, Rebecca
Sent: Thursday, March 17, 2011 3:31 PM
To: Johnson, Michael; Haney, Catherine; Borchardt, Bill; Sheron, Brian; Leeds, Eric
Cc: Weber, Michael; Batkin, Joshua; HOO Hoc; Taylor, Renee; Flory, Shirley; Dorman, Dan; Droggitis, Spiros; Powell, Amy; Virgilio, Martin
Subject: Phone Congressional Liaison Team Briefing

All—We had our first call to Congressional staffers at 1:30 today. The call lasted about 1 hour. We invited over 500 staffers to listen in and ask questions. Mike and his team did a great job. It was good to spend the extra time today providing background material to them, but I'm thinking that we will probably shorten our briefing and instead answer more

0001335

questions in the future. Spiros will be contacting you to set the schedule for the next several days. We will be doing the call at 3:00 daily. This effort is different than the 2 briefings tomorrow on the Hill. Thanks for all your help! Becky

From: Johnson, Michael
Sent: Thursday, March 17, 2011 2:57 PM
To: Haney, Catherine; Borchardt, Bill; Schmidt, Rebecca; Sheron, Brian; Leeds, Eric
Cc: Weber, Michael; Batkin, Joshua; HOO Hoc; Taylor, Renee; Flory, Shirley; Dorman, Dan
Subject: Re:

I can't support before late afternoon. I am planning on supporting a call at 300 tomorrow.
From my blackberry.

From: Haney, Catherine
To: Borchardt, Bill; Schmidt, Rebecca; Sheron, Brian; Leeds, Eric; Johnson, Michael
Cc: Weber, Michael; Batkin, Joshua; HOO Hoc; Taylor, Renee; Flory, Shirley; Dorman, Dan
Sent: Thu Mar 17 13:47:00 2011
Subject: RE:

Seems to me that Brian might be the best candidate since he is already downtown. I tried calling him to discuss who would go. Shirley told me that Brian was at DOE (meeting doesn't end until 5 pm) and that his schedule on Friday was open. She tentatively put the 11:45 briefing on his schedule.

I'm happy to be a back up. If Brian can't do it, I'd like to go down and listen in on the 9:30 briefing.

Unfortunately, we might not have a firm answer until later this evening unless Mike J wants to volunteer in Brian's place.

As an aside, I'm scheduled to leave for France on Saturday afternoon. I spoke with Mike W last night about whether I should cancel. The view was I should continue with the trip. Of course, I can change plans up until I get on the plane. You might want to consider using Dan as a communicator next week. I will leave my "go to book" for him.

From: Borchardt, Bill
Sent: Thursday, March 17, 2011 1:00 PM
To: Schmidt, Rebecca; Sheron, Brian; Leeds, Eric; Haney, Catherine; Johnson, Michael
Cc: Weber, Michael; Batkin, Joshua; HOO Hoc; Taylor, Renee
Subject: RE:

Unfortunately this would conflict with the NRC all hands briefing. Can 1 of the 4 "communicators" handle the 11:45?

From: Schmidt, Rebecca
Sent: Thursday, March 17, 2011 12:48 PM
To: Sheron, Brian; Borchardt, Bill; Leeds, Eric; Haney, Catherine; Johnson, Michael
Cc: Weber, Michael; Batkin, Joshua; HOO Hoc; Taylor, Renee
Subject: RE:

The House has now asked for the same briefing at 11:45. Bill are you available for that one too?

From: Sheron, Brian
Sent: Thursday, March 17, 2011 10:05 AM
To: Borchardt, Bill; Leeds, Eric; Haney, Catherine; Johnson, Michael
Cc: Weber, Michael; Schmidt, Rebecca; Batkin, Joshua; HOO Hoc
Subject: RE:

I should be able to attend. I'll meet you in the ops center around 7am.

From: Borchardt, Bill
Sent: Thursday, March 17, 2011 9:44 AM
To: Leeds, Eric; Haney, Catherine; Sheron, Brian; Johnson, Michael
Cc: Weber, Michael; Schmidt, Rebecca; Batkin, Joshua; HOO Hoc
Subject:

Senate EPW staff has requested a briefing Fri @9:30 (location TBD). I believe that Pete Lyons will be representing DOE. I am planning to represent NRC. I invite any of the 4 addressees of this email (the 4 new "Communicators") to come along to get a sense of what the hill is interested in, etc. It is totally your call. I plan to be in the ops center at 7am to get a last minute update and then take metro (7:45) downtown.

Please let me know whether you plan to attend or not.

Bill

From: Batkin, Joshua
To: Virgilio, Martin; Borchardt, Bill; Leeds, Eric
Subject: Fw: FLIGHTS TO JAPAN TODAY MARCH 18
Date: Friday, March 18, 2011 10:53:01 AM

Here are travel options from USAID for the supplemental travelers.

Joshua C. Batkin
Chief of Staff
Chairman Gregory B. Jaczko
(301) 415-1820

----- Original Message -----
From: RMTPACTSU_ELNRC <RMTPACTSU_ELNRC@ofda.gov>
To: Batkin, Joshua
Sent: Fri Mar 18 10:49:27 2011
Subject: FW: FLIGHTS TO JAPAN TODAY MARCH 18

Mr. Batkin -- Jason asked me to forward you the flight availability information that we received from the USAID Admin Coordinator. Option #3 at 9:55 pm IAD through SFO appears to be the best option if we intend to get folks out today.

Joe Anderson
(b)(6)

-----Original Message-----
From: RMTPACTSU_AC
Sent: Friday, March 18, 2011 9:32 AM
To: RMTPACTSU_ELNRC
Subject: FW: FLIGHTS TO JAPAN TODAY MARCH 18

Please see options below.

Natalya

Admin Coordinator
Pacific Tsunami and Japan Earthquake Response Management Team USAID/DHCA/OFDA
Rmtpactsu_ac@ofda.gov
202-712-0039

-----Original Message-----
From: MANASSAS TRAVEL [mailto:usaid@manassastravel.com]
Sent: Friday, March 18, 2011 9:18 AM
To: Friedman, Ara
Cc: RMTPACTSU_AC
Subject: FLIGHTS TO JAPAN TODAY MARCH 18

We have flights into NRT (Tokyo, Japan) or HND (Haneda, Japan)

BEST AVAILABLE:

1 UA 897Y 18MAR F IADNRT SS1 122P 435P 19MAR J /DCUA /E

OPTION 1
1 AA /** 4418 G 18MAR F DCA JFK 0925A 1030A ERD 0 /E
OPERATED BY AMERICAN EAGLE

0001336

1 AA 167 L 18MAR F JFK NRT 1135A 0230P 777 0 /E
1GVT 517.30 517.30
TOTAL FARE - USD 517.30

OPTION 2
1 AA /** 4544 G 18MAR F DCA JFK 0110P 0230P ERD 0 /E ‡

OPERATED BY AMERICAN EAGLE ‡
1 AA 135 L 18MAR F JFK HND 0710P 1015P 777 0 /E
1GVT 517.30 517.30
TOTAL FARE - USD 517.30

OPTION 3
1 UA 225 W 18MAR F IAD SFO 0955P 1251A 752 0 /E
1 UA 837 K 19MAR J SFO NRT 1236P 0340P 744 0 /E
1GVT 571.30 571.30
TOTAL FARE - USD 571.30

OPTION 4
1 AA /** 3837 Y 18MAR F DCA JFK 0220P 0340P CR7 0 /E
OPERATED BY AMERICAN EAGLE
1 AA 135 L 18MAR F JFK HND 0710P 1015P 777 0 /E
1GVT 587.30 587.30
TOTAL FARE - USD 587.30

OPTION 5 ‡

1 CO /UA 6532 E 18MAR F DCA ORD 1132A 1234P 319 0 /E ‡
OPERATED BY UNITED AIRLINES, INC.
1 CO /UA 6025 K 18MAR F ORD NRT 0216P 0525P 744 0 /E
OPERATED BY UNITED AIRLINES, INC.
1GVT 696.30 696.30
TOTAL FARE - USD 696.30

OPTION 6
1 CO /UA 6380 E 18MAR F IAD ORD 1227P 0134P 320 0 /E
OPERATED BY UNITED AIRLINES, INC.
1 CO /UA 6025 K 18MAR F ORD NRT 0216P 0525P 744 0 /E
OPERATED BY UNITED AIRLINES, INC.
1GVT 719.30 719.30
TOTAL FARE - USD 719.30

OPTION 7
1 DL /KL 9385 Y 18MAR F IAD AMS 0730P 0805A 332 0 /E
OPERATED BY KLM ROYAL DUTCH AIRLINES
1 KL 863 H 19MAR J AMS NRT 0150P 0855A 74M 0 /E
1ADT 9012.10 9012.10
TOTAL FARE - USD 9012.10

Thanks,
Paulette

MANASSAS TRAVEL

1-866-343-5009
(202)842-1970-FAX
USAID@MANASSASTRAVEL.COM

From: McCree, Victor
To: Sabisch, Andrew
Cc: Croteau, Rick; Jones, William; Bartley, Jonathan; Wert, Leonard
Subject: RE: Summary of Events for Duke Boggs Nozzles being sent to Japan
Date: Friday, March 18, 2011 4:20:42 PM

Thanks Andy...more to come.

Vic

From: Sabisch, Andrew
Sent: Friday, March 18, 2011 4:16 PM
To: McCree, Victor
Subject: RE: Summary of Events for Duke Boggs Nozzles being sent to Japan

Vic,

Thanks for the positive feedback.

As I sent in the following experpt from an E-mail to Jonathan earlier . . . . . there were a number of players involved in getting to the point where the nozzles from Oconee are preparing to touch-down in Japan

> "This is clearly a situation where everyone in the Agency and industry needs to be thinking about possible solutions as we did in this case. All I did was to serve as a small cog in a big process and that was recognizing that there was something that might help - the station had a myriad of people that helped pull the material together, get them packed, transport them to Atlanta and then assist in pulling training material together. The Region had people like you that listened to the idea to determine if it had merit and comunicated it up the chain. I had help from Kevin running the gauntlet getting info for the Reactor Saftey Team and INPO as requested. I hope you factor this into any response to the OPA request I am forwarding you as there were a number of key people both within the NRC and at Duke that had a hand in this and if it in fact helps the situation unfolding half a world away, they all need to be recognized at least internally"

I hope that what we identified plays a small role in the overall solution to a bad situation. I have said in my presenations over the years that any event worldwide affects us all and this will clearly drive that point home.

I think we all have the people at the plant and the NRC staff in country in our thoughts and prayers . . . . . and hope that the outcome is contained to the greatest degree possible.

Andy

==================================
Andrew T. Sabisch
U.S. Nuclear Regulatory Commission
Senior Resident Inspector
Oconee Nuclear Station
7812B Rochester Highway, Seneca, SC 29672
(O) 864-873-3001 / (C) (b)(6) (H) 864-508-5995

From: McCree, Victor
Sent: Friday, March 18, 2011 3:45 PM
To: Bartley, Jonathan; Wert, Leonard; Croteau, Rick; Jones, William
Cc: Sabisch, Andrew
Subject: RE: Summary of Events for Duke Boggs Nozzles being sent to Japan

Andy – thanks again for bringing the availability of this device to our attention. BZ!

000337

From: Bartley, Jonathan
Sent: Friday, March 18, 2011 3:35 PM
To: McCree, Victor; Wert, Leonard; Croteau, Rick; Jones, William
Cc: Sabisch, Andrew
Subject: Summary of Events for Duke Boggs Nozzles being sent to Japan

Vic, per our earlier discussion.

3/16 - Andy contacted me in the morning about a device Duke had developed to provide SFP cooling with pool integrity lost (B.5.b event) to see if we should consider mentioning it for use in Japan. I asked Andy to provide me a writeup describing the device.

3/16 @ 1340 Andy provided me the writeup (attached). I reviewed the writeup and decided the device should be considered. I received Rick's concurrence and forwarded the information to the HOO at 1428.

3/16 ~1830 HQ reactor safety team contacted Andy to see if he could coordinate with Duke to crate and be prepared to ship 4 "Boggs Boxes" to Japan. Andy responded back to the site and coordinated with the licensee to have four nozzles crated for shipment. These were spare nozzles. Oconee will fabricate additional nozzles to replace the spares.

3/17 Andy and Kevin Ellis coordinate with the Reactor Safety Team, Duke, and INPO to get the nozzles transported to Dobbins ARB and shipped to Vandenberg AFB in California. Andy and Kevin also worked with Duke and INPO to create a concise operating guide and have it translated into Japanese by Japanese personnel on assignment at INPO. Andy and Kevin also participated in several phone calls with the Reactor Safety Team and our team in Japan describing the device and how to set it up.

Here is a link showing testing of the device S:\SFP Spray Nozzle Video (ONS)\Boggs box.wmv

Jonathan Bartley
Chief, Reactor Projects Branch 1
Division of Reactor Projects, Region II
U. S. Nuclear Regulatory Commission
jonathan.bartley@nrc.gov
Office: 404.997.4607
Cell: (b)(6)

From: Sosa, Belkys
To: Collins, Elmo
Cc: Virgilio, Martin; Sanfilippo, Nathan; Hay, Michael; Vegel, Anton; Kennedy, Kriss; Miller, Geoffrey; Lantz, Ryan; Baggett, Steven; Snodderly, Michael
Subject: Query: Ltr from Sens Boxer, Feinstein
Date: Friday, March 18, 2011 11:36:46 AM

Elmo,
I just wanted to confirm that the prep material will include responses to the specific questions on the subject letter and the background info on SONGS. Feel free to email to the material to both Commissioner and myself.

Thanks for your support,
Belkys

From: Collins, Elmo
Sent: Thursday, March 17, 2011 3:30 PM
To: Sosa, Belkys
Cc: Virgilio, Martin; Sanfilippo, Nathan; Hay, Michael; Vegel, Anton; Kennedy, Kriss; Miller, Geoffrey; Lantz, Ryan
Subject: Action: Ltr from Sens Boxer, Feinstein

Thanks

We'll work through EDO to get prep material up

Elmo

From: Sosa, Belkys
To: Collins, Elmo; Davis, Roger
Sent: Thu Mar 17 15:15:54 2011
Subject: Fw: Ltr from Sens Boxer, Feinstein

Hi Elmo, I hope all is well.
Please note that the trip to Diablo and SONGS will also include Senator Boxer. If you have any information on these plants that can help Cmr Apostolakis prepare for the site visit, we would really appreciate it. I'll send you the details of the Senators agenda ASAP. I'm waiting for OCA to provide.
Thks

Sent from an NRC Blackberry
Belkys Sosa
(b)(6)

From: Powell, Amy
To: Blake, Kathleen
Cc: Davis, Roger; Sosa, Belkys
Sent: Thu Mar 17 14:04:10 2011
Subject: Ltr from Sens Boxer, Feinstein

Kathleen,

Here is the letter that I referenced on my call this afternoon with Belkys and Roger.

000/338

Amy

Amy Powell
Associate Director
U. S. Nuclear Regulatory Commission
Office of Congressional Affairs
Phone: 301-415-1673

From: Collins, Elmo
To: Virgilio, Martin
Cc: Howell, Art
Subject: Info/Awareness: Clarifying next week"s visits in CA
Date: Friday, March 18, 2011 12:08:22 PM

Marty

A summary of the trip next week with Sen. Feinstein and Boxer is contained below. Note that Apostolakis is not going to Diablo.

Also note that Amy and I will be traveling with Senator Feinstein on her private plane. This has been cleared with Steve Burns.

Elmo

From: Powell, Amy
Sent: Friday, March 18, 2011 10:28 AM
To: Uselding, Lara; Weil, Jenny; Hall, Randy; Lantz, Ryan; Miller, Geoffrey
Cc: Brenner, Eliot; Collins, Elmo; Schmidt, Rebecca
Subject: Clarifying next week's visits in CA

Laura and all –

Here is what is happening:

Elmo Collins and I will be on the Diablo Canyon visit with Sen. Feinstein and her staff on Tuesday.

Elmo and I will then travel to SONGS with the Senator and her staff. Cmr. Apostolakis and Belkys Sosa (his Chief of Staff) will meet us there. Additionally, Sen. Boxer will join for the SONGS visit.

From Sen. Feinstein's staff, the press is aware of the visits but is NOT invited. Sen. Feinstein's staff will NOT make her available for a press conference, photo op. She may issue a statement after the fact.

My understanding is that Sen. Boxer is handling the SONGS visit similarly.

Please call or e-mail me with any questions.

Thanks,
Amy

Amy Powell
Associate Director
U. S. Nuclear Regulatory Commission
Office of Congressional Affairs
Phone: 301-415-1673

00/339

From: Uselding, Lara
Sent: Friday, March 18, 2011 11:19 AM
To: Weil, Jenny; Schmidt, Rebecca; Powell, Amy; Hall, Randy; Lantz, Ryan; Miller, Geoffrey
Cc: Brenner, Eliot
Subject: Now hearing DC is part of tourRe: SONGS Tour for California senators

Just learned at our DRP meeting that Feinstein is now including Diablo tour on Tuesday, is this correct?
For both tours, if there still a NO PRESS plan?
Lara
Lara Uselding
NRC Region 4 Public Affairs
(b)(6)

From: Weil, Jenny
To: Schmidt, Rebecca; Powell, Amy; Hall, Randy; Lantz, Ryan; Uselding, Lara
Sent: Thu Mar 17 13:05:31 2011
Subject: Fw: SONGS Tour for California senators

This is the current schedule proposed by Feinstein/Boxer's staff, though they might try to see if Senators' schedule allow for more than an hour at the plant, per SCE's request.

Sent via BlackBerry
Jenny Weil
Congressional Affairs Officer
U.S Nuclear Regulatory Commission
(b)(6)

From: Field, Katherine (Feinstein) <Katherine_Field@feinstein.senate.gov>
To: Weil, Jenny; Kathy.Yhip@sce.com <Kathy.Yhip@sce.com>
Cc: Bohigian, Tom (Boxer) <Tom_Bohigian@boxer.senate.gov>; Kaneko, Nicole (Boxer) <Nicole_Kaneko@boxer.senate.gov>; Kalligeros, Maria (Boxer) <Maria_Kalligeros@boxer.senate.gov>; Nelson, Matthew (Feinstein) <Matthew_Nelson@feinstein.senate.gov>; Clapp, Doug (Appropriations) <Doug_Clapp@appro.senate.gov>
Sent: Thu Mar 17 12:38:25 2011
Subject: SONGS Tour

Hi Kathy, Jenny,

Both Senator Feinstein and Senator Boxer are scheduled to tour SONGS at 1:30pm on Tuesday, March 22nd. This is the schedule I put together after advancing the site with Kathy on Tuesday. I have included Senator Boxer's staff on this email as well. Can you please advise us on the schedule, logistics and security required for the visit?

SONGS Tour

1:30pm

- From the gate , car tour to over look of the Power Plant.
  - o The View will be of the Reactors, Holding Pools and sea wall

  This will take 15 minutes.
- Then proceed to the actual power plant where the reactors are.

  Security, sign in and base line radiation will be taken at this time. This should take 15 min.

1:45 pm

- Tour the facility

2:00 pm

- **Meeting with below, in conference room**

- US Senator Dianne Feinstein
- US Senator Barbara Boxer
- George Apostolakis, Commissioner, U.S. Nuclear Regulatory Commission
- Elmo Collins, Jr., Regional Administrator, U.S. Nuclear Regulatory Commission
- David Applegate, Senior Science Advisor for Earthquake & Geologic Hazards, U.S. Geologic Survey
- Pete Dietrich, Senior Vice President and Chief Nuclear Officer, Southern California Edison

2:30 pm **Depart for San Diego**

Thank you!

Katherine Field
U.S. Senator Dianne Feinstein
750 B Street, Suite 1030
San Diego, California 92101
(p) 619-231-9712 (f) 619-231-1108

From: Smith, Brooke
To: Trapp, James
Subject: Fw: Meeting w Amb & DART
Date: Friday, March 18, 2011 4:46:21 AM

Jim is this meeting still on for 6pm.

Sent from an NRC Blackberry.
Brooke G. Smith
(b)(6)

----- Original Message -----
From: Casto, Chuck
To: Smith, Brooke
Sent: Fri Mar 18 04:45:20 2011
Subject: Re: Meeting w Amb & DART

In building so I will be there ....

----- Original Message -----
From: Smith, Brooke
To: Casto, Chuck
Sent: Fri Mar 18 03:48:15 2011
Subject: Meeting w Amb & DART

Chuck - Jim just told me that DART has a meeting with Amb Roos at 6pm and you are invited. Are you still with the Amb?

Sent from an NRC Blackberry.
Brooke G. Smith
(b)(6)

000/340

Nelson, Robert

From:	Nelson, Robert
Sent:	Friday, March 18, 2011 12:36 PM
To:	Leeds, Eric
Cc:	Giitter, Joseph
Subject:	FYI: Ltr from Sens Boxer, Feinstein
Importance:	High

This went to Virgilio & I don't see you on distribution. Emphasis added by me. This will be our focus for this afternoon.

NELSON

From: Sosa, Belkys
Sent: Friday, March 18, 2011 10:37 AM
To: Collins, Elmo
Cc: Virgilio, Martin; Sanfilippo, Nathan; Hay, Michael; Vegel, Anton; Kennedy, Kriss; Miller, Geoffrey; Lantz, Ryan; Baggett, Steven; Snodderly, Michael
Subject: Query: Ltr from Sens Boxer, Feinstein

Elmo,
I just wanted to confirm that the prep material **will include responses to the specific questions on the subject letter** and the background info on SONGS. Feel free to email to the material to both Commissioner and myself.

Thanks for your support,
Belkys

From: Collins, Elmo
Sent: Thursday, March 17, 2011 3:30 PM
To: Sosa, Belkys
Cc: Virgilio, Martin; Sanfilippo, Nathan; Hay, Michael; Vegel, Anton; Kennedy, Kriss; Miller, Geoffrey; Lantz, Ryan
Subject: Action: Ltr from Sens Boxer, Feinstein

Thanks

We'll work through EDO to get prep material up

Elmo

From: Sosa, Belkys
To: Collins, Elmo; Davis, Roger
Sent: Thu Mar 17 15:15:54 2011
Subject: Fw: Ltr from Sens Boxer, Feinstein

Hi Elmo, I hope all is well.
Please note that the trip to Diablo and SONGS will also include Senator Boxer. If you have any information on these plants that can help Cmr Apostolakis prepare for the site visit, we would really appreciate it. I'll send you the details of the Senators agenda ASAP. I'm waiting for OCA to provide.
Thks

000|341

Sent from an NRC Blackberry
Belkys Sosa
(b)(6)

From: Powell, Amy
To: Blake, Kathleen
Cc: Davis, Roger; Sosa, Belkys
Sent: Thu Mar 17 14:04:10 2011
Subject: Ltr from Sens Boxer, Feinstein

Kathleen,

Here is the letter that I referenced on my call this afternoon with Belkys and Roger.

Amy

Amy Powell
Associate Director
U. S. Nuclear Regulatory Commission
Office of Congressional Affairs
Phone: 301-415-1673

From: (b)(6)
To:
Subject: LLW Forum Flash: Waste Related Bills Introduced During Texas Legislative Session
Date: Friday, March 18, 2011 9:04:35 AM

Texas Compact/State of Texas

Waste Related Bills Introduced During Texas Legislative Session

Four separate bills including provisions concerning low-level radioactive waste management, and one concerning funding for the Texas Low-Level Radioactive Waste Disposal Compact Commission (TLLRWDCC), have been introduced during the current legislative session in Texas.

The following is a brief overview of the bills as introduced. Persons interested in more detailed information are directed to the text of the proposed legislation themselves.

Article 6 of SB 657 (TCEQ Sunset Bill)

SB 657 (TCEQ Sunset Bill) was introduced by Texas State Senators Glenn Hegar (Republican, 18th District) and Joan Huffman (Republican, 17th District) on March 9, 2011. The bill relates to the continuation and functions of the Texas Commission on Environmental Quality (TCEQ) and abolishing of the On-site Wastewater Treatment Research Council.

As drafted, among other things, Article 6 of the bill would require that compact waste disposal fees adopted by TCEQ be sufficient to provide an amount necessary to support the activities of the TLLRWDCC.

In addition, the bill would require that the TLLRWDCC account be held in the general revenue fund. The TCEQ would be required to deposit the portion of the compact waste disposal fee calculated to support the activities of the TLLRWDCC into the account. Money from the account would then only be able to be appropriated to support TLLRWDCC operations.

SB 1504

SB 1504 was introduced by Texas State Senators Keliger and Juan "Chuy" Hinojosa (Democrat, 20th District) on March 10, 2011. As drafted, among other things, the draft legislation would prohibit Waste Control Specialists LLC (WCS) from accepting

(1) nonparty compact waste that originated or was generated outside of the United States;
(2) nonparty compact waste that does not meet the waste characteristics and waste forms for disposal applicable to other compact waste as set forth in WCS license;
(3) more than 20,000 total cubic feet of nonparty compact waste annually, of which not more than 9,000 cubic feet may be Class B and C; or
(4) a volume of nonparty compact waste that would exceed 30 percent of the total volume and radioactivity of Texas' projected waste.

The bill would impose a surcharge for the disposal of nonparty compact party waste in the amount of $1,000 per cubic foot and $500 per curie.

In addition, the bill would prohibit WCS from accepting any waste at the disposal facility until TCEQ establishes a compact waste disposal fee by rule.

The bill provides that a state seeking to become a party state to the compact after January 1, 2011 must, among other things, make a payment of $40 million to the State of Texas. As written, after September 1, 2015, the fee for admission to the compact would increase to $60 million. The proposed legislation would require a state that had previously withdrawn as a party to the compact to

0001342

pay the previously committed fee of $25 million in addition to the aforementioned fees. It also provides that all payments made by states seeking to become a party to the compact may not be refunded, even if a party state withdraws from the compact.

Under the draft legislation, the provision allowing states to pay a fee to join the compact would expire on September 1, 2020.

SB 1605

SB 1605 was introduced by Texas State Senator Kel Seliger (Republican, 31st District) on March 11, 2011. As drafted, among other things, it would prevent WCS from accepting compact waste prior to the adoption of bylaws by the TLLRWDCC. It also would prohibit money for the TLLRWDCC from being appropriated as part of an appropriation for the TCEQ.

The bill would require the TLLRWDCC to file with the Governor and appropriate legislative committees a biennial written report that includes:

(1) a statement of the TLLRWDCC's activities during the preceding fiscal biennium;
(2) the TLLRWDCC's recommendations for necessary and desirable legislation; and,
(3) an accounting of all funds received and disbursed by the TLLRWDCC during the preceding biennium.

In addition, the proposed legislation provides that the Attorney General would represent the TLLRWDCC in all matters before the state and federal courts. It also would make the TLLRWDCC subject to review under the Texas Sunset Act in 2013 and every 12th year thereafter, but provides that the TLLRWDCC may not be abolished thereunder. The costs for such review, as determined solely by the Texas Sunset Commission, would be paid by the TLLRWDCC under the proposed bill.

HB 2184

HB 2184 was introduced by Texas House Member Tryon Lewis (Republican, 81st District) on March 3, 2011. The bill was referred to the State Affairs Committee, which held a public hearing on March 14, 2011. It relates "to the identification, modification, generation, and enhancement of new and existing state revenue streams from certain new and existing programs, processes, and procedures involving the state's policy in regard to the disposition of certain low-level radioactive waste and in protection of the general health, safety and welfare of the state's citizens, including the prohibition on the importation of waste of international origin and the establishment of certain fees and limits on waste disposal to maximize state revenue."

Among other things, HB 2184 would allow WCS to accept non-compact waste at its licensed commercial disposal facility in Andrews County "to the extent the acceptance does not diminish the disposal volume available to non-host party states." The bill, as introduced, would prohibit WCS from accepting for disposal at the compact waste disposal facility any waste of international origin.

The draft bill would provide for the imposition of a new fee payable quarterly to the state general revenue fund equal to five percent of the gross receipts from non-compact waste accepted for disposal at the commercial disposal facility. This fee is in addition to the five percent fee assessed under current law on any waste disposed at either the commercial or federal waste disposal facility.

A non-party state could avoid being subject to this additional fee by becoming a member of the Texas Low-Level Radioactive Waste Disposal Compact after it meets certain applicable provisions, including the payment of $40 million in fees to the State of Texas. As written, after September 1, 2015, the fee for admission to the compact would increase to $60 million. The proposed legislation would require a state that had previously withdrawn as a party to the compact to pay the previously committed fee of $25 million in addition to the aforementioned fees. Under the draft legislation, however, the provision allowing states to pay a fee to join the compact would expire on September 1, 2020.

HB 2184 also would authorize WCS to contract with non-regional generators for the disposal of waste at mutually agreeable fees and rates prior to the adoption of compact waste disposal fees by the TLLRWDCC and the establishment of maximum disposal rates by the TCEQ. Under the proposed bill, regional compact generators would not be required to enter into contracts with WCS prior to the adoption of waste disposal fees and rates. Instead, the bill would grant interim rate-making authority to the TCEQ's Executive Director for these generators.

The proposed legislation also provides that, in establishing maximum disposal rates, TCEQ shall assume that out-of-region waste will be accepted for disposal at the compact facility. Such out-of-region waste, however, would not be subject to the TCEQ maximum disposal rates under the proposed bill. Instead, the maximum disposal rates would only apply to generators in the host state and party state. Finally, HB 2184 states that historical operating losses incurred by WCS prior to operations may be recovered only via revenues from the disposal of out-of-region waste.

HB 3699

HB 3699 was introduced by Texas House Member Sylvester Turner (Democrat, 139th District) on March 11, 2011. The bill would prohibit the disposal of waste generated in another state at the compact disposal facility until the TCEQ has completed the following studies:

(1) a comparative analysis of anticipated costs, volumes and radioactivity resulting from the disposal of regional waste to determine whether or not the disposal facility will have any excess capacity under each of the following scenarios: (a) if waste minimization techniques are adopted by waste generators, waste processors, and WCS; and, (b) if during nuclear plant decommissioning radioactive materials are not separated from one another based upon classification or from other non-radioactive materials prior to disposal;
(2) an analysis of potential cleanup costs if the facility's liner is breached and radioactive waste migrates into one or more neighboring fresh water formations after the termination of the license, and of the liability born by the state under such scenarios;
(3) an analysis of anticipated transportation routes through the state that would be used to bring imported waste to the disposal facility, the likelihood of accidents and/or spills along those routes, the adequacy of emergency preparedness to respond to accidents and/or spills along those routes, and the resulting costs that would be associated with healthcare, cleanup, and compensating property owners for contaminated property; and,
(4) an analysis of the adequacy of all related surety bonds against post-closure costs, including funds for unplanned events, to ensure that these funds are adequately segregated, the instruments are highly unlikely to result in a financial reversal, and that the amounts available will cover the state's liabilities.

As drafted, the bill \would prohibit WCS from accepting non-regional waste at the facility if acceptance may diminish the disposal volume available to party states. It also would prohibit WCS from accepting waste of international origin for disposal at the compact waste disposal facility.

In addition, the draft legislation would allow WCS to accept nonparty compact waste for disposal at the compact waste disposal facility only as necessary to address unplanned or extraordinary events occurring in the generating state, as defined by rule by the TLLRWDCC. In such case, the bill would limit the volume of nonparty compact waste that WCS may accept to 10 percent of the total volume of waste projected to be disposed by Texas at the facility..

Background

On January 14, 2009, by a vote of 2 to 0, TCEQ Commissioners denied hearing requests and approved an order on WCS' Radioactive Material License Application No. R04100. (See *LLW Notes*, January/February 2009, pp. 1, 9-11.) Following the completion of condemnation proceedings and the acquisition of underlying mineral rights, TCEQ's Executive Director signed the final license on September 10, 2009. (See *LLW Notes*, September/October 2009, pp. 1, 12-13.)

The license allows WCS to operate two separate facilities for the disposal of Class A, B and C low-

level radioactive waste—one being for the Texas Low-Level Radioactive Waste Disposal Compact, which is comprised of the States of Texas and Vermont, and the other being for federal waste as defined under the Low-Level Radioactive Waste Policy Act of 1980 and its 1985 amendments.

On January 4, 2011, the TLLRWDCC approved revised Preliminary Rules on the Exportation and Importation of Waste by a vote of five to two. (See *LLW Notes*, January/February 2010, pp. 1, 16.) Various amendments to the rules were accepted prior to passage, including those offered by the Vermont Commissioners that clarified issues regarding the reserving of disposal capacity at the regional commercial facility for generators from the State of Vermont.

The vote followed a series of legal maneuvers by Public Citizen and the Texas Civil Rights Project that attempted to block the Commission from proceeding to act on the proposed rules. The groups initially succeeded at getting a state district court judge to enjoin the Commission from adopting, approving, or otherwise implementing the proposed rules. However, a federal district judge subsequently dismissed the case and dissolved the temporary restraining order ("TRO") after determining that neither the state nor federal court had jurisdiction to prevent the Commission from acting on the proposed rules.

On January 7, 2011, TCEQ Executive Director Mark Vickery approved the commencement of construction of the planned WCS low-level radioactive waste disposal facility "subject to all applicable license conditions, rules and statutes." (See *LLW Notes*, January/February 2010, pp. 19-21.) Earlier the same day, TCEQ and WCS executed a "Lease and Indemnification Agreement Concerning Low-Level Radioactive Waste Disposal in Andrews County, Texas." The document sets forth provisions relating to conveyance of the Compact Waste Disposal Facility to the State of Texas, including indemnification for any liability imposed on the state.

WCS is currently authorized for the processing, storage and disposal of a broad range of hazardous, toxic, and certain types of radioactive waste. WCS is a subsidiary of Valhi, Inc.

Interested parties may track bills on-line at http://www.capitol.state.tx.us/.

For additional information on WCS license application, please go to the TCEQ web page at http://www.tceq.state.tx.us/permitting/radmat/licensing/wcs_license_app.html or contact the Radioactive Materials Division at (512) 239-6466.

A copy of the TLLRWDCC's import/export rules and other related information may be found on the Commission's web site at http://www.tllrwdcc.org.

For additional information, please contact Susan Jablonski—Director of the Radioactive Materials Division at TCEQ—at (512) 239-6466 or at sjablons@tceq.state.tx.us. You may also contact Rodney Baltzer—President of WCS—at (972) 450-4235 or at rbaltzer@valhi.net. Or, you may contact Michael Ford, Chair of the TLLRWDCC, at (512) 820-2930 or at michael.ford@tllrwdcc.org.

March 18, 2011

Todd D. Lovinger, Esq.
Executive Director
LLW Forum, Inc
(202) 265-7990

Bozin, Sunny

From: Nieh, Ho
Sent: Friday, March 18, 2011 6:32 PM
To: Bozin, Sunny
Subject: FW: Incoming Correspondence

Can you please update our japan books with this letter on Monday - thanks.

wll probably fwd you a couple more letters.

Have a good weekend.

Ho

Ho Nieh
Chief of Staff
Office of Commissioner William C. Ostendorff U.S. Nuclear Regulatory Commission
(301) 415-1811 (office)
(b)(6)
(301) 415-1757 (fax)
ho.nieh@nrc.gov

From: McKelvin, Sheila
Sent: Friday, March 18, 2011 4:33 PM
To: Batkin, Joshua; Bradford, Anna; Sharkey, Jeffry; Sosa, Belkys; Bubar, Patrice; Nieh, Ho
Cc: Vietti-Cook, Annette; Jaegers, Cathy; Clayton, Kathleen; McKelvin, Sheila; Docket, Hearing; Champ, Billie; Mike, Linda
Subject: Incoming Correspondence

I have attached for your information a letter from Eric Schneiderman, Attorney General of New York re: Seismic Risk at Indian Point Nuclear Generating Station.

Sheila McKelvin, SECY

0001343

Bozin, Sunny

From: Nieh, Ho
Sent: Friday, March 18, 2011 6:45 PM
To: Herr, Linda; Bozin, Sunny
Subject: RE: Letter from New York State Attorney General Eric T. Schneiderman

ok, Linda was a few steps ahead of me - if you printed already, disregard my last message.

thanks for helping.

Ho

Ho Nieh
Chief of Staff
Office of Commissioner William C. Ostendorff U.S. Nuclear Regulatory Commission
(301) 415-1811 (office)
(b)(6)
[redacted]
ho.nieh@nrc.gov

From: Herr, Linda
Sent: Friday, March 18, 2011 2:20 PM
To: Bozin, Sunny
Cc: Nieh, Ho
Subject: FW: Letter from New York State Attorney General Eric T. Schneiderman

Sunny:
Please log, print and circulate. Ho may request that a copy be put in his and WCO's Japan binders.
Thanks,
Linda

-----Original Message-----
From: CMRAPOSTOLAKIS Resource
Sent: Friday, March 18, 2011 2:06 PM
To: Pace, Patti; Gibbs, Catina; Batkin, Joshua; Lepre, Janet; Harves, Carolyn; Crawford, Carrie; Herr, Linda; Bozin, Sunny; Blake, Kathleen; Savoy, Carmel
Subject: FW: Letter from New York State Attorney General Eric T. Schneiderman

Correspondence will handle.

-----Original Message-----
From: Janice Dean [mailto:Janice.Dean@ag.ny.gov]
Sent: Friday, March 18, 2011 1:32 PM
To: CMRAPOSTOLAKIS Resource; CMRJACZKO@nrc.gov; CMRMAGWOOD Resource; CMROSTENDORFF Resource; CMRSVINICKI Resource
Cc: Janice Dean; John Sipos; Daniel O'Neill; Manna Jo Greene; Robert Snook; Michael Delaney; William Dennis; Ross Gould; Stephen Filler; Elise Zoli; Joan Matthews; John Parker; Kathryn Sutton; Martin O'Neill; Paul Bessette; Jones, Andrea; Mizuno, Beth; Harris, Brian; Newell, Brian; Roth(OGC), David; Monteith, Emily; Docket, Hearing; Kirstein, Josh; Lathrop, Kaye; McDade, Lawrence; Wright, Megan; OCAAMAIL Resource; Wardwell, Richard; Turk, Sherwin; Deborah Brancato; Phillip Musegaas; Daniel Riesel; Jessica Steinberg; Melissa-Jean Rotini
Subject: Letter from New York State Attorney General Eric T. Schneiderman

000344

Dear Chairman Jaczko and Commissioners Svinicki, Apostolakis, Magwood, and Ostendorff,

Attached please see a letter from New York State Attorney General Eric Schneiderman concerning Indian Point.

Respectfully submitted,

Janice A. Dean

Janice A. Dean
Assistant Attorney General
Office of the NYS Attorney General
120 Broadway, 26th Floor
New York, New York 10271
(212) 416-8459 voice
(212) 416-6007 fax
janice.dean@ag.ny.gov

Lee, Richard

From: Sangimino, Donna-Marie
Sent: Friday, March 18, 2011 11:16 AM
To: Sheron, Brian; Uhle, Jennifer; Gibson, Kathy
Cc: Lee, Richard; Valentin, Andrea; Kardaras, Tom; Dehn, Jeff; Weber, Michael
Subject: RE: Japanese TV request for Snadia video footage. FW: NHK-TV, Japan - Sandia OECD Lower Head Failure Project - final report

Will do

Donna-Marie Sangimino

-----Original Message-----
From: Sheron, Brian
Sent: Friday, March 18, 2011 11:13 AM
To: Sangimino, Donna-Marie; Uhle, Jennifer; Gibson, Kathy
Cc: Lee, Richard; Valentin, Andrea; Kardaras, Tom; Dehn, Jeff; Weber, Michael
Subject: Re: Japanese TV request for Snadia video footage. FW: NHK-TV, Japan - Sandia OECD Lower Head Failure Project - final report

I have no objection, since OECD cooperative research program data is made available 3 years later.

Please notify OPA and IRC ET that we are releasing it.

----- Original Message -----
From: Sangimino, Donna-Marie
To: Sheron, Brian; Uhle, Jennifer; Gibson, Kathy
Cc: Lee, Richard; Valentin, Andrea; Kardaras, Tom; Dehn, Jeff
Sent: Fri Mar 18 10:18:27 2011
Subject: FW: Japanese TV request for Snadia video footage. FW: NHK-TV, Japan - Sandia OECD Lower Head Failure Project - final report

All,

This is a request from NEA about video footage of an OECD/NEA program from ~10 years ago. It was NRC funded, Sandia hosted. The video is of a vessel being pressurized and heated until it fails. NEA wants to release the video to a Japanese TV station, and believes it is publically releasable at this point. They're looking to the NRC for a tacit approval at this point.

Jeff talked to Richard, and he believes there isn't a technical reason to decline the request. If you have an opinion on this, please forward as soon as possible. Jeff can provide the video or a link and password to view the video if desired.

000345

We would propose forwarding this request to the Ops Center management with no objection to NEA's request.

Thank you,

Donna-Marie Sangimino

From: Diane.JACKSON@oecd.org [mailto:Diane.JACKSON@oecd.org]
Sent: Friday, March 18, 2011 7:28 AM
To: Dehn, Jeff; Sangimino, Donna-Marie
Cc: Janice.DUNNLEE@oecd.org; Javier.REIG@oecd.org
Subject: Japanese TV request for Snadia video footage. FW: NHK-TV, Japan - Sandia OECD Lower Head Failure Project - final report

Hello Jeff -

A Japanese news station would like to obtain footage and report of the Oct 23 2000 experiment the OECD had requested Sandia to conduct. Please see below the news release from Sandia.

http://www.sandia.gov/media/NewsRel/NR2000/vessel.htm

In the e-mail below, the video is identified from the secure NEA website (and information to access it).

Bottom line, the data from the project is now publically available, but there is a question if video footage is included or not.

Before making any decision, the NEA would like to check with the NRC.

Best regards,

F6

Diane Jackson, Nuclear Safety Specialist Nuclear Safety Division, OECD Nuclear Energy Agency (NEA)
Tel.: +33 (0)1 45 24 10 55, Diane.Jackson@oecd.org

From: GAS Serge, NEA/RE
Sent: Friday, March 18, 2011 12:03
To: DUNN LEE Janice, NEA; JACKSON Diane, NEA/SURN
Cc: CLAPPER Maureen [United States]; STANFORD Benjamin, NEA/RE
Subject: FW: NHK-TV, Japan - Sandia OECD Lower Head Failure Project - final report

Hello Janice and Diane,

Please see below - I assume you can download the video from this link (Ben will otherwise advise how to proceed).

http://www.oecd-nea.org/press/accredited/video/OLHF-2.mpg

Please use the following username and password:

Username: (b)(6)

Password:

Could you please make sure that NRC has no objection to the release of the footage?

Thanks in advance.

Best regards,

Serge

From: GAS Serge, NEA/RE
Sent: Friday, March 18, 2011 11:56
To: 'KAMADA TOSHIHIKO'
Cc: DUNN LEE Janice, NEA; YOSHIMURA Uichiro, NEA/SRAN; REIG Javier, NEA/SURN
Subject: NHK-TV, Japan - Sandia OECD Lower Head Failure Project - final report

Dear Toshi,

I am being told that we could be entitled to send it but we don't want to do that without the Japanese government's green light and the US NRC's since they were the main funding organisation at the time. We are starting now to see with the US NRC is it is fine with them. If you could look on your side. Thanks a lot in advance.

Best regards,

Serge

From: KAMADA TOSHIHIKO [mailto:toshihiko.kamada@mofa.go.jp]
Sent: Friday, March 18, 2011 11:22
To: STANFORD Benjamin, NEA/RE; GAS Serge, NEA/RE
Cc: YOSHIMURA Uichiro, NEA/SRAN
Subject: RE: FW: NHK-TV, Japan - Sandia OECD Lower Head Failure Project - final report

Dear Mr. Benjamin Stanford and Serge,

Thank you very much for your information!

May I ask you a question?

Whose possession is the contents and data of this video and the report?

(member country?, project participants?, NEA? or others?)

Is it possible to think that NEA has right to decide whether this should be open or not?

Best regards,

Toshi

//

Toshihiko KAMADA

First Secretary (Science and Technology)

Permanent Delegation of Japan to the OECD

TEL: +33 (0)1 53 76 61 81

FAX: +33 (0)1 45 63 05 44

E-mail: toshihiko.kamada@mofa.go.jp <mailto:toshihiko.kamada@deljp-ocde.fr>

//

経済協力開発機構日本政府代表部

一等書記官（科学技術担当）

鎌　田　俊　彦

//

From: Benjamin.STANFORD@oecd.org [mailto:Benjamin.STANFORD@oecd.org]
Sent: Friday, March 18, 2011 10:50 AM
To: Serge.GAS@oecd.org; KAMADA TOSHIHIKO
Cc: Uichiro.YOSHIMURA@oecd.org
Subject: RE: FW: NHK-TV, Japan - Sandia OECD Lower Head Failure Project - final report

Dear Mr. Kamada,

You can download the video from this link.

http://www.oecd-nea.org/press/accredited/video/OLHF-2.mpg

Please use the following username and password:

Username: (b)(6)

Password:

Please do not share this username and password. We will provide a separate one to the journalists if the video is to be shared.

Please contact me should you have any technical difficulties.

Best regards,

Benjamin Stanford
Webmaster
OECD Nuclear Energy Agency (NEA)
Tel.: +33 (0)1 45 24 10 09
benjamin.stanford@oecd.org <mailto:benjamin.stanford@oecd.org>
www.oecd-nea.org <http://www.oecd-nea.org>

From: GAS Serge, NEA/RE
Sent: Friday, March 18, 2011 10:41 AM
To: KAMADA Toshihiko [Company Name]
Cc: YOSHIMURA Uichiro, NEA/SRAN; STANFORD Benjamin, NEA/RE
Subject: FW: FW: NHK-TV, Japan - Sandia OECD Lower Head Failure Project - final report
Importance: High

Dear Toshi,

Please see the exchange of messages below. In fact we have found the footage but the video could have some impact on the public so I think you should have a look before we pass it to the TV channel. Our webmaster Ben Stanford is going to send it to you very soon.

Best regards,

Serge

From: yuhong hiro koh (b)(6)
Sent: Friday, March 18, 2011 10:15
To: GAS Serge, NEA/RE
Cc: HUERTA Alejandro, NEA/SURN; TURCHI Elodie, PAC/WASH; RUMPF Matthias, PAC/WASH; FISHER Helen, PAC/COM
Subject: Re: FW: NHK-TV, Japan - Sandia OECD Lower Head Failure Project - final report

Mr. Serge Gas,

Thank you very much for this.
Can you please tell me if you have a video footage of the experiment?
If you do, I would like to send someone from NHK Europe to retrieve it today.
I have contacted Sandia, but they unfortunately do not want to help in this matter and are not lifting a finger. Thank you again.

Hiro

On 3/18/2011 1:55 AM, Serge.GAS@oecd.org wrote:

Dear Hiro,

This is the final report of the OECD (Sandia) Lower Head Failure project run between 2000 and 2002.

The final report is available (downloadable) on our public website:

http://www.oecd-nea.org/nsd/docs/2002/csni-r2002-27.pdf

We cannot send it since it is 570 pages and about 40 Mbytes, without the appendices.

These experiments were to assess resistance of reactor vessel in case of core melt down.

Our expert Alejandro Huerta (copied, (b)(6) can help you to understand the report if you need it.

Best regards,

Mr. Serge Gas

Head, Central Secretariat, External Relations and Public Affairs

OECD Nuclear Energy Agency

Tel. : +33 1 45 24 10 10

Fax: +33 1 45 24 11 15

Le Seine Saint Germain, 12 Boulevard des Iles, 92130 Issy-les-Moulineaux, France

-----Original Message-----

From: yuhong hiro koh (b)(6)

Sent: Thursday, March 17, 2011 3:35 PM

To: TURCHI Elodie, PAC/WASH

Subject: NHK-TV, Japan

Dear Elodie,

Thank you for accommodating me over the phone just now.

We would like to obtain FOOTAGE and REPORT of the

2000, Oct 23 experiment the OECD had requested Sandia to

conduct. Please see below the news release from Sandia.

http://www.sandia.gov/media/NewsRel/NR2000/vessel.htm

I don't have a name of the experiment, but it was to see how

string the reactor vessels are to pressure and and blasts.

Again, we have a Friday night deadline for the special edition

program we are putting together on the situation at Fukushima.

I would sincerely and greatly appreciate your help.

Thank you,

Hiro

--

Yuhong Hiro Koh

NHK, Science& Nature

Tel: US ++1 310-502-4506

Fax: US ++1 310-539-3021

e: s02709-koh@nhk.or.jp

(b)(6)

Homepage: http://www.nhk.or.jp

English: http://www.nhk.or.jp/nhkworld/index.html

--

Yuhong Hiro Koh
NHK, Science & Nature
Tel: US ++1 310-502-4506
Fax: US ++1 310-539-3021
e: s02709-koh@nhk.or.jp
(b)(6)
Homepage: http://www.nhk.or.jp
English: http://www.nhk.or.jp/nhkworld/index.html

---

it from your computer system. We deny any liability for damages resulting from the use of this Email by the unintended recipient, including the recipient in error.

From:	RST01 Hoc
Sent:	Friday, March 18, 2011 12:20 AM
To:	PMT01 Hoc; PMT02 Hoc; PMTERDS Hoc
Cc:	LIA07 Hoc
Subject:	FW: 3/18 1200 Speedi Data
Attachments:	FUKUSHIMA1 wind(12hüj.jpg; FUKUSHIMA1 air concentrationüi12-13hüj.jpg; FUKUSHIMA1 air concentrationüi13-14hüj.jpg; FUKUSHIMA1 air concentrationüi14-15hüj.jpg; FUKUSHIMA1 air doseüi12-13hüj.jpg; FUKUSHIMA1 air doseüi13-14hüj.jpg; FUKUSHIMA1 air doseüi14-15hüj.jpg

FYI, I think this is more suited for you.

-----Original Message-----
From: LIA07 Hoc
Sent: Friday, March 18, 2011 12:16 AM
To: RST01 Hoc
Subject: FW: 3/18 1200 Speedi Data

-----Original Message-----
From: HOO Hoc
Sent: Friday, March 18, 2011 12:12 AM
To: LIA07 Hoc; OST01 HOC; OST02 HOC; OST03 HOC
Subject: FW: 3/18 1200 Speedi Data

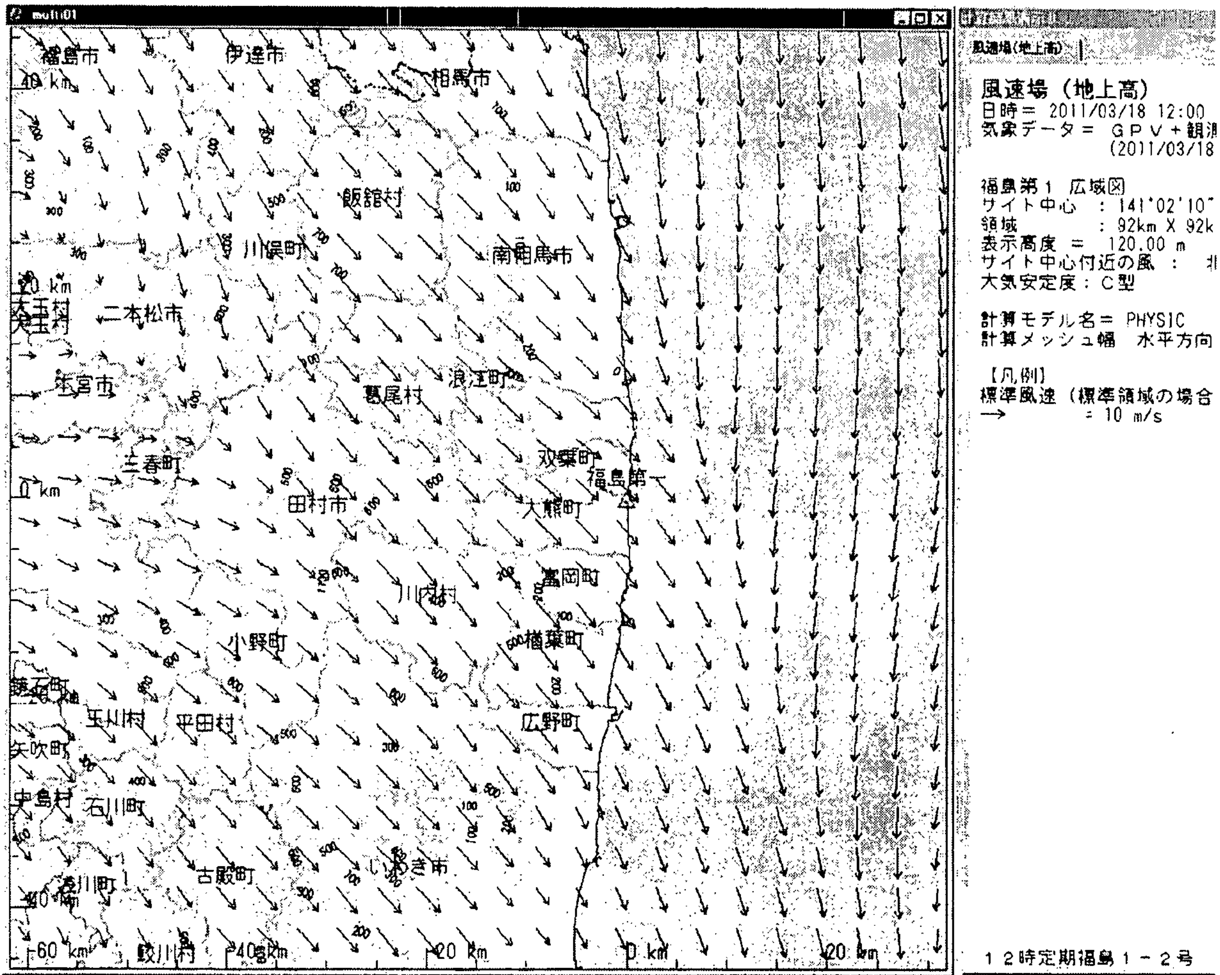
Headquarters Operations Officer
U.S. Nuclear Regulatory Commission
Phone: 301-816-5100
Fax: 301-816-5151
email: hoo.hoc@nrc.gov
secure e-mail: hoo1@nrc.sgov.gov

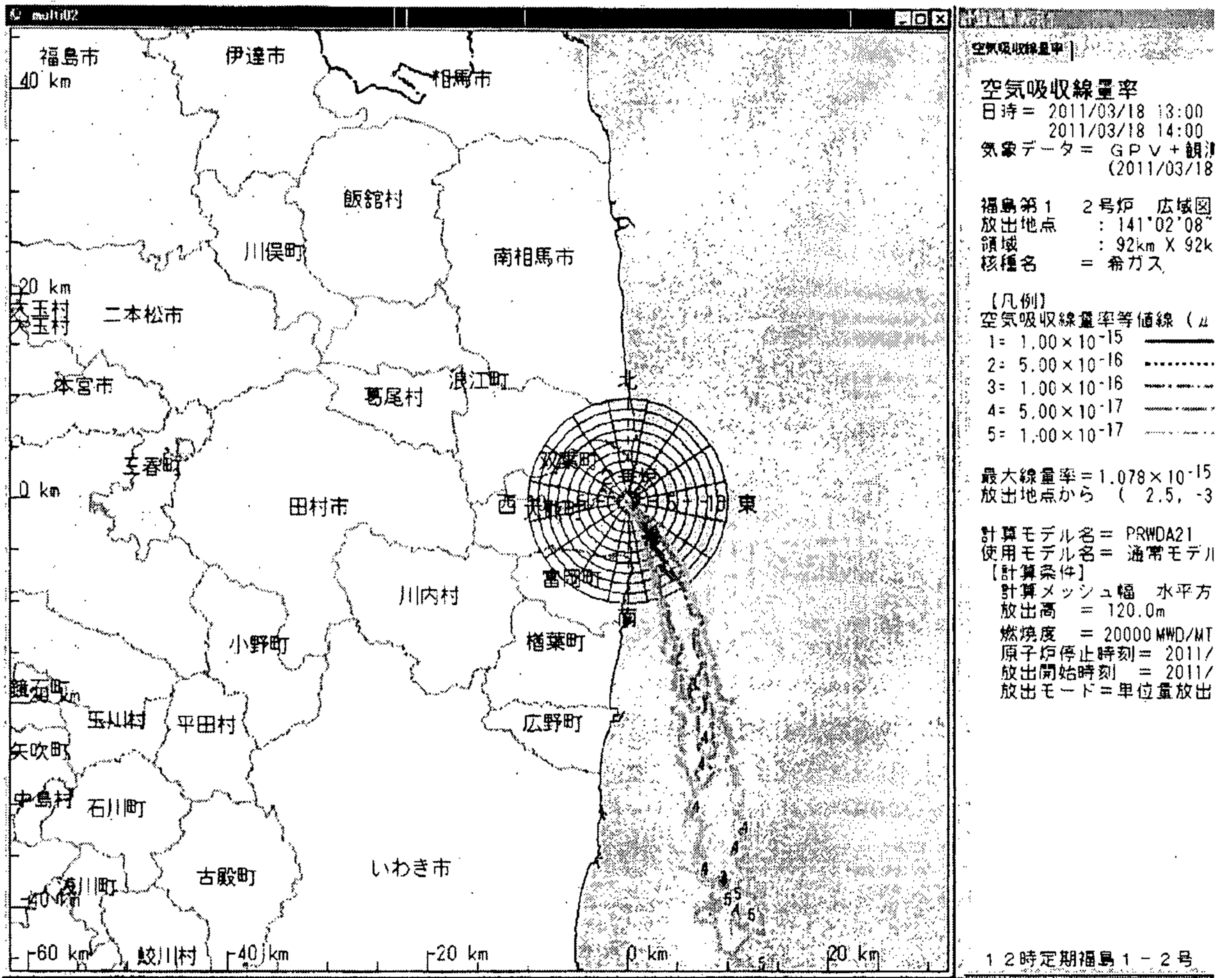
-----Original Message-----
From: JapanEmbassy, TaskForce [mailto:JapanEmbassyTaskForce@state.gov]
Sent: Thursday, March 17, 2011 11:46 PM

(b)(6)

000346

Subject: 3/18 1200 Speedi Data


multi01
福島市
伊達市
相馬市
飯舘村
川俣町
南相馬市
二本松市
大玉村
本宮市
葛尾村
浪江町
三春町
双葉町
福島第一
田村市
大熊町
川内村
富岡町
小野町
楢葉町
玉川村
平田村
広野町
矢吹町
中島村
石川町
いわき市
古殿町
鮫川村
60 km
40 km
20 km
0 km
20 km
風速場（地上高）
風速場（地上高）
日時＝ 2011/03/18 12:00
気象データ＝ ＧＰＶ＋観測
(2011/03/18
福島第１ 広域図
サイト中心 ： 141°02'10"
領域 ： 92km X 92k
表示高度 ＝ 120.00 m
サイト中心付近の風 ：
大気安定度：Ｃ型
計算モデル名＝ PHYSIC
計算メッシュ幅 水平方向
【凡例】
標準風速（標準領域の場合
= 10 m/s
１２時定期福島１－２号


福島市
伊達市
相馬市
飯舘村
川俣町
南相馬市
二本松市
大玉村
本宮市
葛尾村
浪江町
三春町
田村市
双葉町
大熊町
川内村
富岡町
小野町
楢葉町
玉川村
平田村
広野町
矢吹町
中島村
石川町
古殿町
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40 km
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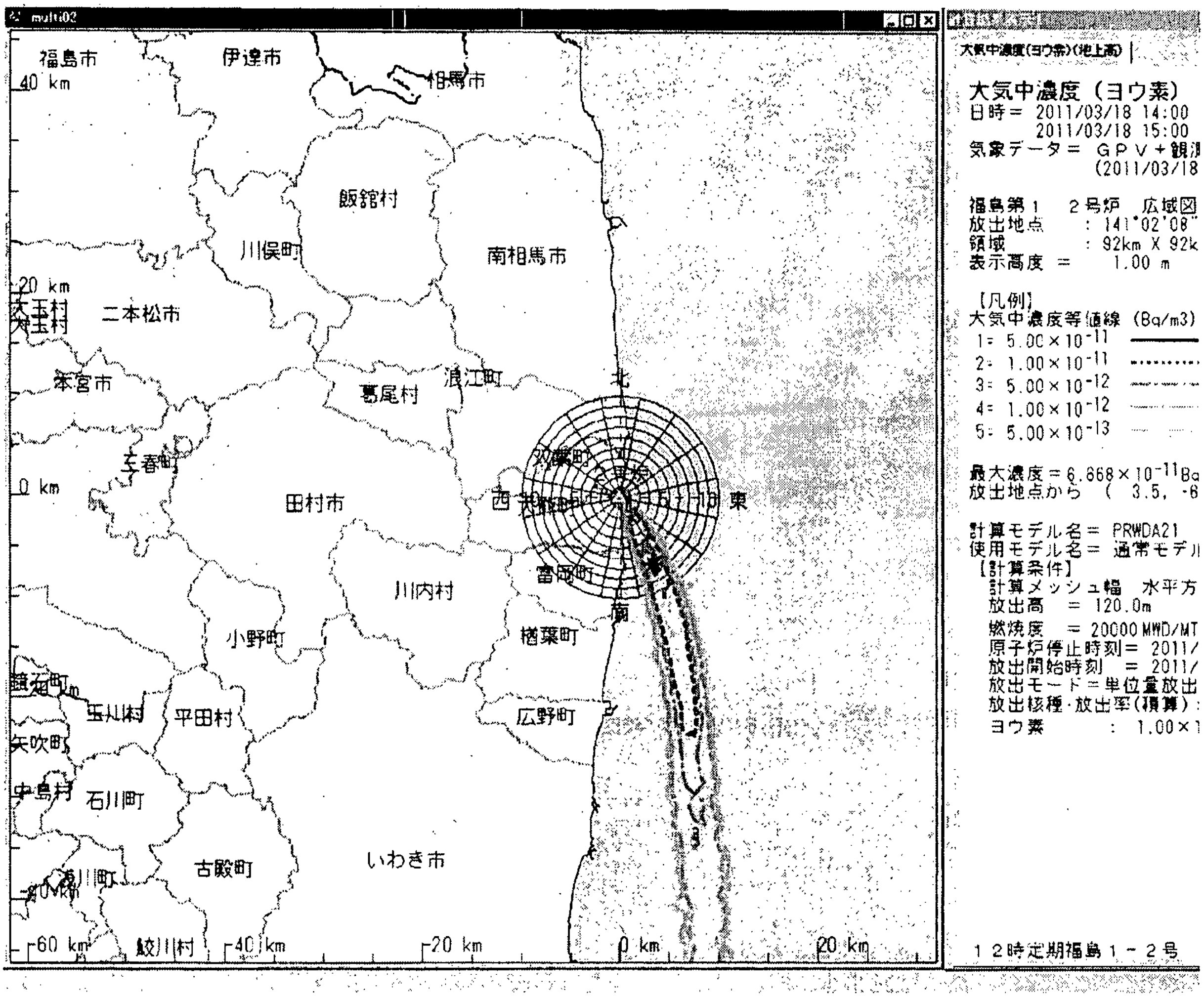
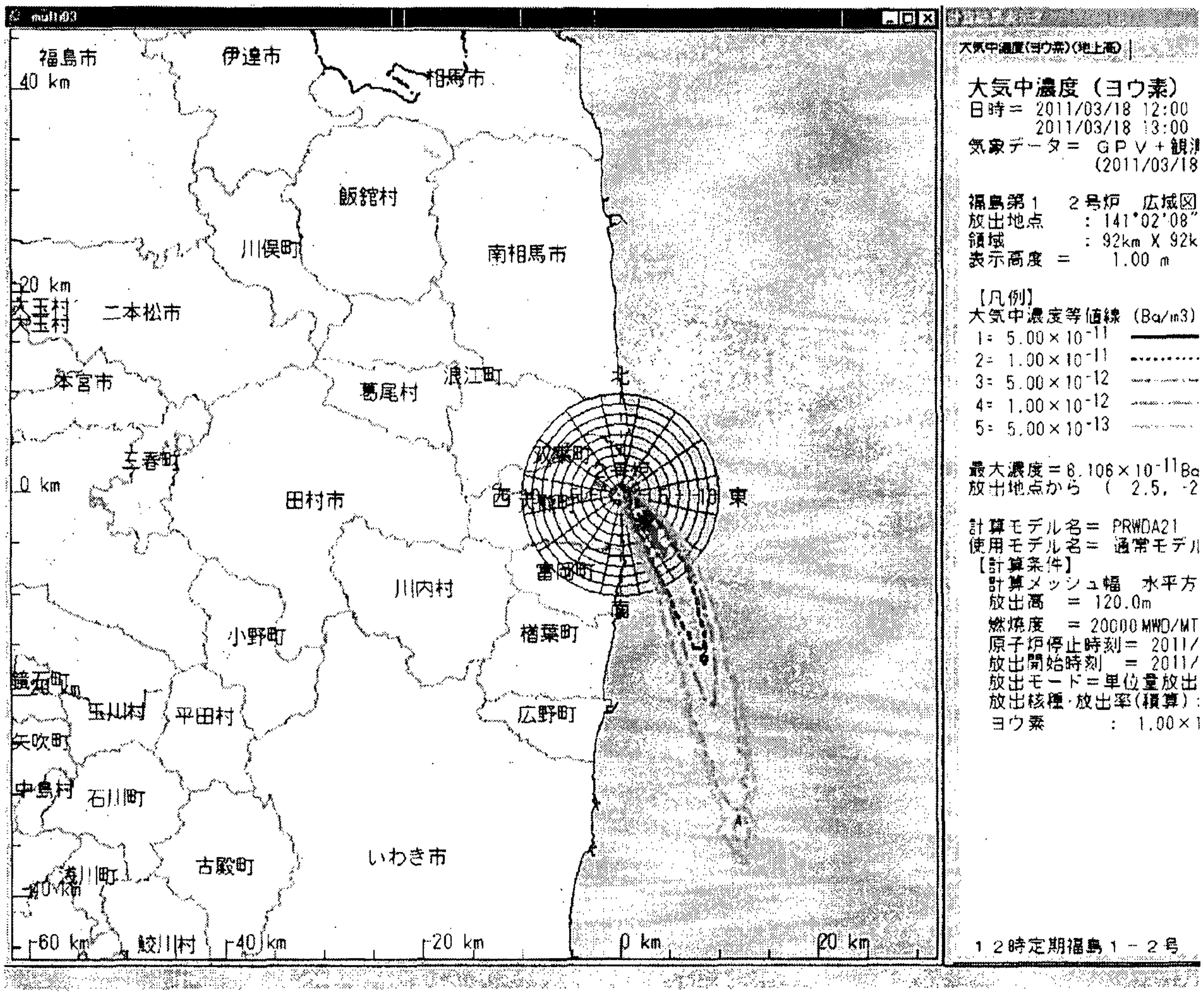
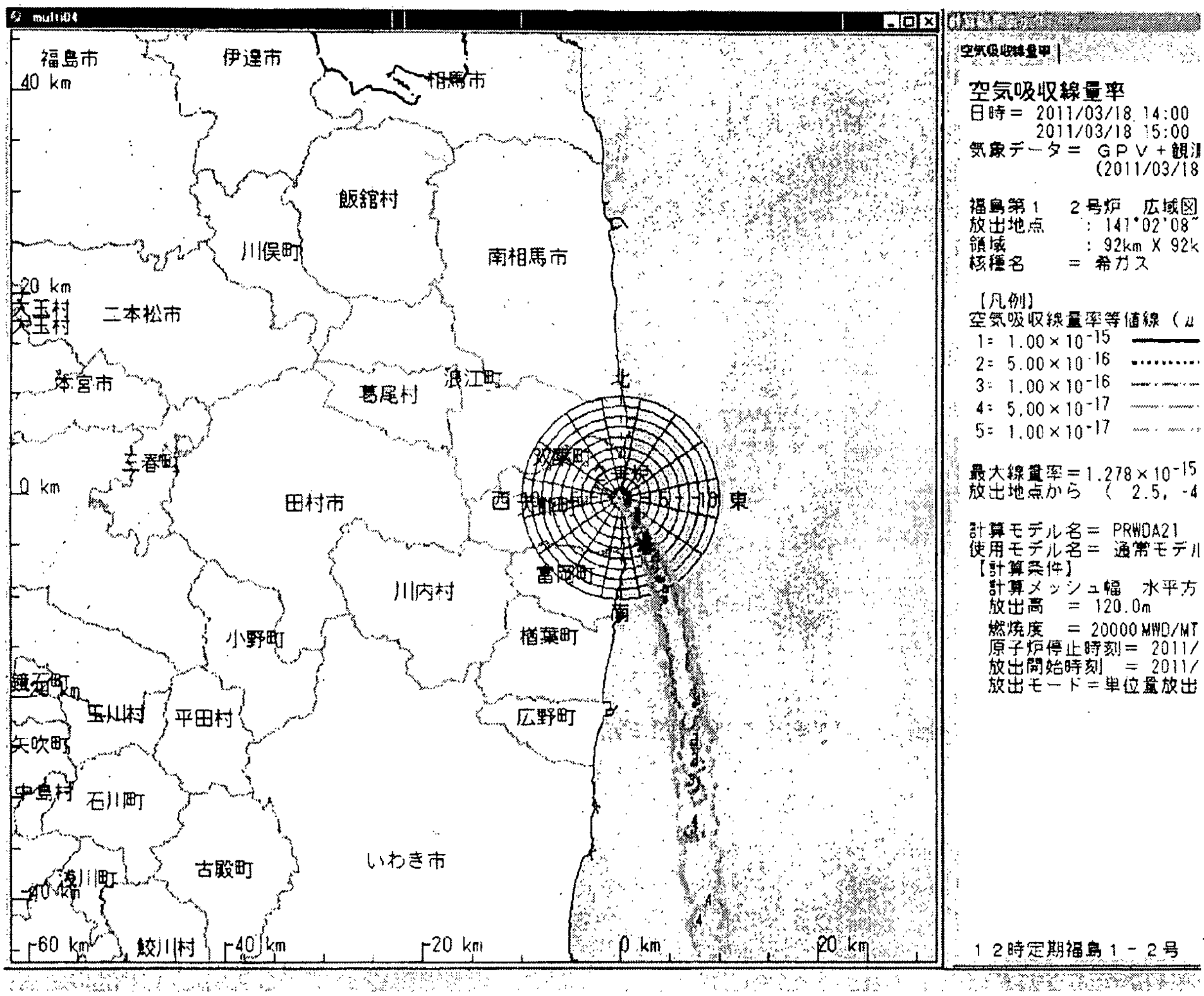
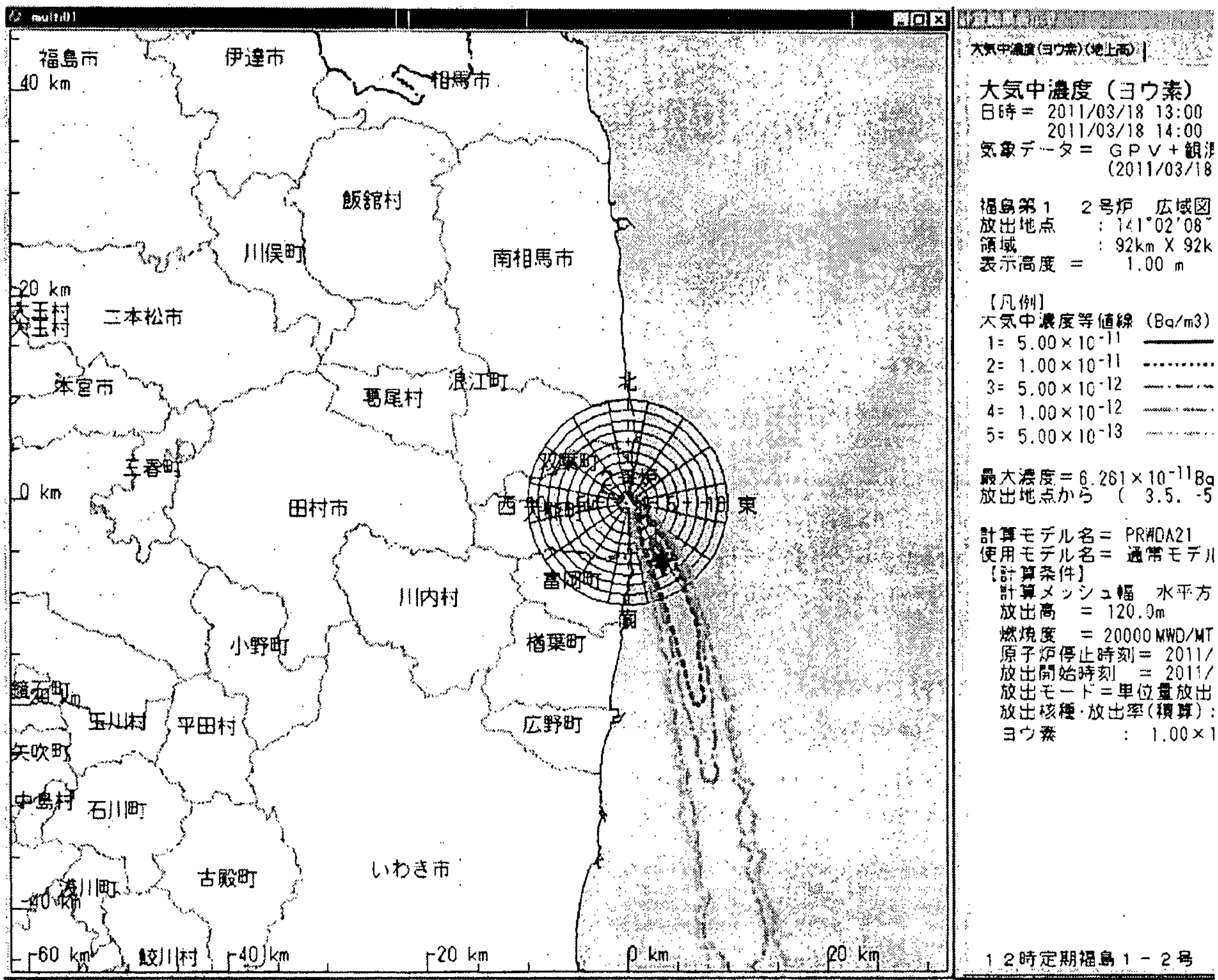
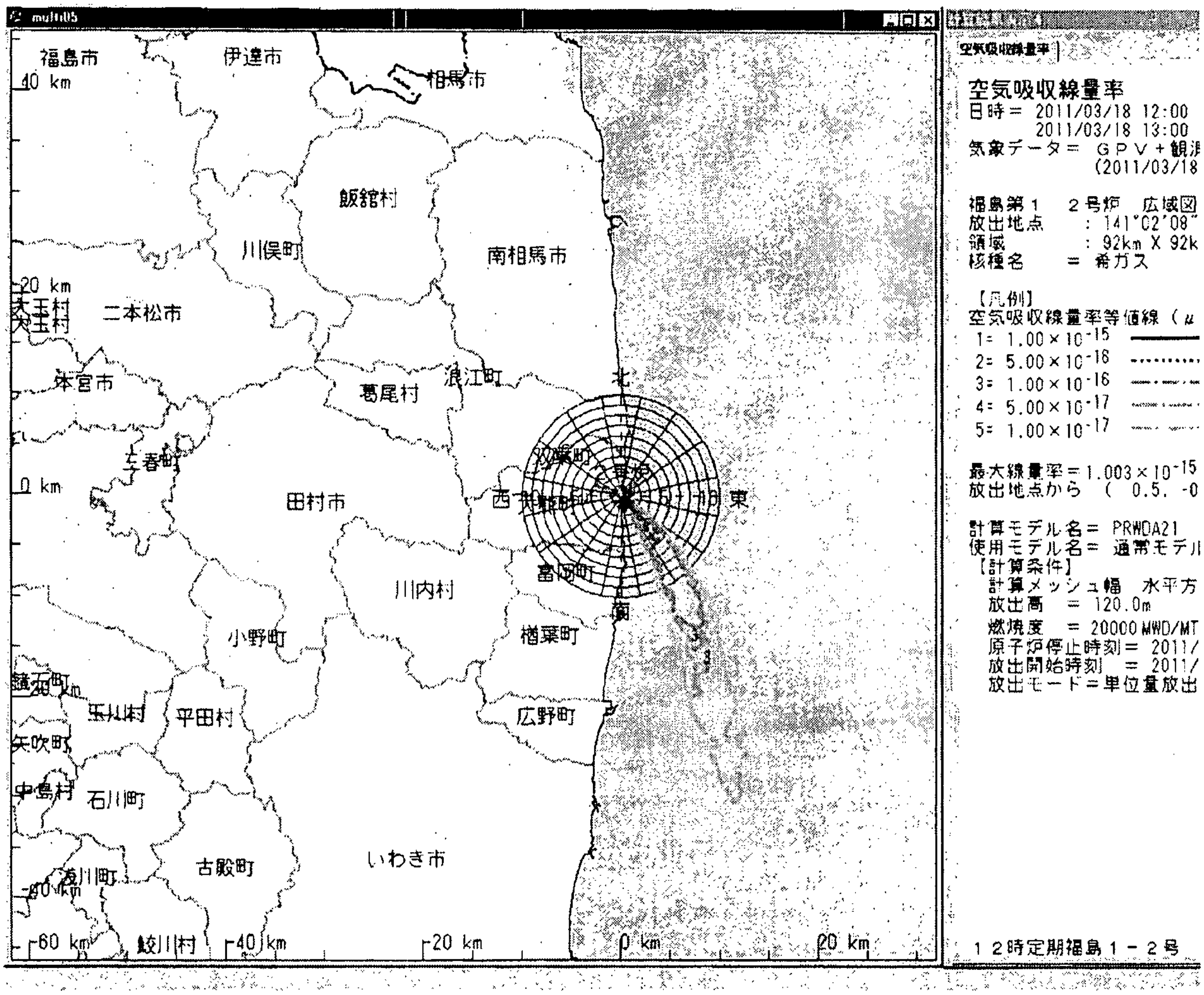
空気吸収線量率
空気吸収線量率
日持＝ 2011/03/18 13:00
2011/03/18 14:00
気象データ＝ ＧＰＶ＋観
(2011/03/18
福島第１　２号炉　広域図
放出地点　：141°02'08"
領域　：92km X 92k
核種名　＝ 希ガス
【凡例】
空気吸収線量率等値線（μ
1= 1.00×10-15
2= 5.00×10-16
3= 1.00×10-16
4= 5.00×10-17
5= 1.00×10-17
最大線量率＝1.078×10-15
放出地点から　（ 2.5, -3
計算モデル名＝ PRWDA21
使用モデル名＝ 通常モデル
【計算条件】
計算メッシュ幅　水平方
放出高　＝ 120.0m
燃焼度　＝ 20000 MWD/MT
原子炉停止時刻＝ 2011/
放出開始時刻　＝ 2011/
放出モード＝単位量放出
１２時定期福島１－２号


multi02
福島市
伊達市
相馬市
40 km
飯舘村
川俣町
南相馬市
20 km
二本松市
本宮市
葛尾村
浪江町
北
0 km
田村市
西
東
川内村
富岡町
南
小野町
楢葉町
平田村
広野町
石川町
古殿町
いわき市
60 km
40 km
20 km
0 km
20 km
大気中濃度(ヨウ素)(地上高)
大気中濃度（ヨウ素）
日時＝ 2011/03/18 14:00
2011/03/18 15:00
気象データ＝ ＧＰＶ＋観測
(2011/03/18
福島第１ ２号炉 広域図
放出地点 : 141°02'08"
領域 : 92km X 92k
表示高度 ＝ 1.00 m
【凡例】
大気中濃度等値線 (Bq/m3)
1= 5.00×10-11
2= 1.00×10-11
3= 5.00×10-12
4= 1.00×10-12
5= 5.00×10-13
最大濃度＝6.668×10-11Bq
放出地点から (3.5, -6
計算モデル名＝ PRWDA21
使用モデル名＝ 通常モデル
【計算条件】
計算メッシュ幅 水平方
放出高 ＝ 120.0m
燃焼度 ＝ 20000 MWD/MT
原子炉停止時刻＝ 2011/
放出開始時刻 ＝ 2011/
放出モード＝単位量放出
放出核種・放出率(積算)：
ヨウ素 ： 1.00×1
１２時定期福島１－２号


multi03
福島市
伊達市
相馬市
40 km
飯舘村
川俣町
南相馬市
20 km
大玉村
二本松市
本宮市
葛尾村
浪江町
北
三春町
0 km
田村市
西
東
富岡町
川内村
南
小野町
楢葉町
玉川村
平田村
広野町
矢吹町
中島村
石川町
古殿町
いわき市
浅川町
鮫川村
-60 km
-40 km
-20 km
0 km
20 km
大気中濃度(ヨウ素)(地上高)
大気中濃度（ヨウ素）
日時＝ 2011/03/18 12:00
2011/03/18 13:00
気象データ＝ ＧＰＶ＋観
(2011/03/18
福島第１ ２号炉 広域図
放出地点 : 141°02'08"
領域 : 92km X 92k
表示高度 ＝ 1.00 m
【凡例】
大気中濃度等値線 (Bq/m3)
1= 5.00×10-11
2= 1.00×10-11
3= 5.00×10-12
4= 1.00×10-12
5= 5.00×10-13
最大濃度＝8.106×10-11Bq
放出地点から (2.5, -2
計算モデル名＝ PRWDA21
使用モデル名＝ 通常モデル
【計算条件】
計算メッシュ幅 水平方
放出高 ＝ 120.0m
燃焼度 ＝ 20000 MWD/MT
原子炉停止時刻＝ 2011/
放出開始時刻 ＝ 2011/
放出モード＝単位量放出
放出核種・放出率(積算)：
ヨウ素 : 1.00×1
１２時定期福島１－２号


multi04
福島市
伊達市
相馬市
40 km
飯舘村
川俣町
南相馬市
20 km
大玉村
二本松市
本宮市
葛尾村
浪江町
北
三春町
双葉町
0 km
田村市
西
大熊町
10
東
富岡町
川内村
南
小野町
楢葉町
平田村
広野町
矢吹町
石川町
古殿町
いわき市
浅川町
鮫川村
-60 km
-40 km
-20 km
0 km
20 km
空気吸収線量率
空気吸収線量率
日時＝ 2011/03/18 14:00
2011/03/18 15:00
気象データ＝ ＧＰＶ＋観測
(2011/03/18
福島第１ ２号炉 広域図
放出地点 : 141°02'08"
領域 : 92km X 92k
核種名 ＝ 希ガス
【凡例】
空気吸収線量率等値線（μ
1= 1.00×10^-15
2= 5.00×10^-16
3= 1.00×10^-16
4= 5.00×10^-17
5= 1.00×10^-17
最大線量率＝1.278×10^-15
放出地点から （ 2.5, -4
計算モデル名＝ PRWDA21
使用モデル名＝ 通常モデル
【計算条件】
計算メッシュ幅 水平方
放出高 ＝ 120.0m
燃焼度 ＝ 20000 MWD/MT
原子炉停止時刻＝ 2011/
放出開始時刻 ＝ 2011/
放出モード＝単位量放出
１２時定期福島１－２号


multi01
福島市
伊達市
相馬市
飯舘村
川俣町
南相馬市
40 km
20 km
0 km
-20 km
-60 km
-40 km
-20 km
0 km
20 km
大玉村
二本松市
本宮市
葛尾村
浪江町
北
東
西
南
三春町
田村市
双葉町
大熊町
富岡町
川内村
楢葉町
小野町
平田村
玉川村
広野町
矢吹町
中島村
石川町
古殿町
いわき市
浅川町
鮫川村
大気中濃度(ヨウ素)(地上高)
大気中濃度（ヨウ素）
日時＝ 2011/03/18 13:00
2011/03/18 14:00
気象データ＝ ＧＰＶ＋観
(2011/03/18
福島第１ ２号炉 広域図
放出地点 : 141°02'08"
領域 : 92km X 92k
表示高度 ＝ 1.00 m
【凡例】
大気中濃度等値線 (Bq/m3)
1= 5.00×10-11
2= 1.00×10-11
3= 5.00×10-12
4= 1.00×10-12
5= 5.00×10-13
最大濃度＝6.261×10-11Bq
放出地点から (3.5, -5
計算モデル名＝ PRWDA21
使用モデル名＝ 通常モデル
【計算条件】
計算メッシュ幅 水平方
放出高 ＝ 120.0m
燃焼度 ＝ 20000 MWD/MT
原子炉停止時刻＝ 2011/
放出開始時刻 ＝ 2011/
放出モード＝単位量放出
放出核種・放出率(積算):
ヨウ素 : 1.00×1
１２時定期福島１－２号



multi05
福島市
伊達市
相馬市
飯舘村
川俣町
南相馬市
二本松市
大玉村
本宮市
葛尾村
浪江町
三春町
田村市
西
東
北
南
双葉町
大熊町
富岡町
川内村
小野町
楢葉町
平田村
広野町
石川町
古殿町
いわき市
鮫川村
40 km
20 km
0 km
-60 km
-40 km
-20 km
空気吸収線量率
日時＝ 2011/03/18 12:00
2011/03/18 13:00
気象データ＝ ＧＰＶ＋観
(2011/03/18
福島第１ ２号炉 広域図
放出地点 : 141°02'08"
領域 : 92km X 92k
核種名 ＝ 希ガス
【凡例】
空気吸収線量率等値線（μ
1= 1.00×10-15
2= 5.00×10-16
3= 1.00×10-16
4= 5.00×10-17
5= 1.00×10-17
最大線量率＝1.003×10-15
放出地点から （ 0.5, -0
計算モデル名＝ PRWDA21
使用モデル名＝ 通常モデル
【計算条件】
計算メッシュ幅 水平方
放出高 ＝ 120.0m
燃焼度 ＝ 20000 MWD/MT
原子炉停止時刻＝ 2011/
放出開始時刻 ＝ 2011/
放出モード＝単位量放出
１２時定期福島１－２号

Weaver, Tonna

From: Kammerer, Annie
Sent: Friday, March 18, 2011 6:51 AM
To: Kammerer, Annie; Hiland, Patrick; Skeen, David; Case, Michael; RST01 Hoc
Cc: Howe, Allen; Nelson, Robert; Stutzke, Martin; Giitter, Joseph; Rihm, Roger; McDermott, Brian; Hasselberg, Rick; Chokshi, Nilesh; Munson, Clifford; Cook, Christopher; Flanders, Scott; Ross-Lee, MaryJane; Brown, Frederick; Ruland, William; Dudes, Laura; Karas, Rebecca; Ake, Jon; Hogan, Rosemary; Uhle, Jennifer; Marshall, Michael; Uselding, Lara; Randall, John; Allen, Don; Burnell, Scott; Hayden, Elizabeth; Pires, Jose; Graves, Herman; Candra, Hernando; Murphy, Andrew; Sheron, Brian; Dricks, Victor; Warnick, Greg; Reynoso, John; Lantz, Ryan; Markley, Michael; Orders, William; Santiago, Patricia; Snodderly, Michael; Baggett, Steven; Sosa, Belkys; Davis, Roger; Franovich, Mike; Castleman, Patrick; Sharkey, Jeffry; Boska, John; Ma, John; Tegeler, Bret; Patel, Pravin; Shams, Mohamed; Morris, Scott; Brenner, Eliot; Harrington, Holly; Seber, Dogan; Ledford, Joey; Johnson, Michael; Virgilio, Martin; Holahan, Vincent; Bergman, Thomas; Webb, Michael; Manoly, Kamal; Khanna, Meena; Screnci, Diane; Thomas, Eric; Nguyen, Quynh; Meighan, Sean
Subject: RE: Seismic Q&As March 18th 5am update
Attachments: Seismic Questions for Incident Response 3-18-11 5am.pdf

All,

Please see the updated version of the Seismic Q&As.

Among today's highlights:
*We added a Terms and Definitions section at the end of the document. (We know that an acronyms list would be helpful too, but it will have to wait a little)
*The "additional information" section has been split into tables, plots, and fact sheets
*A high-level draft fact sheet on NRC's seismic regulations has been added
*We added a section to track outstanding questions that have come in from congress. This will support those who get the tickets in the short terms (most likely NRR). The questions will be moved to the appropriate sections long term (as long as they are not duplicates.)

I'm sure we all agree this has been a crazy week!. We're hoping that the weekend workload is lighter (if only because we won't get as many email from in house) and we can clean up this document and fill in some of the missing answers in preparation for the news story changing. We're trying hard to get out in front of the next wave.

Cheers,
Annie

From: Kammerer, Annie
Sent: Thursday, March 17, 2011 2:36 AM
To: Kammerer, Annie; Hiland, Patrick; Skeen, David; Case, Michael; RST01 Hoc
Cc: Howe, Allen; Nelson, Robert; Stutzke, Martin; Giitter, Joseph; Rihm, Roger; McDermott, Brian; Hasselberg, Rick; Chokshi, Nilesh; Munson, Clifford; Cook, Christopher; Flanders, Scott; Ross-Lee, MaryJane; Brown, Frederick; Giitter, Joseph; Howe, Allen; Ruland, William; Dudes, Laura; Karas, Rebecca; Ake, Jon; Munson, Clifford; Hogan, Rosemary; Uhle, Jennifer; Marshall, Michael; Uselding, Lara; Randall, John; Allen, Don; Burnell, Scott; Hayden, Elizabeth; Pires, Jose; Graves, Herman; Candra, Hernando; Murphy, Andrew; Murphy, Andrew; Pires, Jose; Hogan, Rosemary; Sheron, Brian; Dricks, Victor; Warnick, Greg; Reynoso, John; Lantz, Ryan; Markley, Michael; Orders, William; Santiago, Patricia; Snodderly, Michael; Baggett, Steven; Sosa, Belkys; Davis, Roger; Franovich, Mike; Castleman, Patrick; Sharkey, Jeffry; Boska, John; Ma, John; Tegeler, Bret; Patel, Pravin; Shams, Mohamed; Morris, Scott; Brenner, Eliot; Harrington, Holly; Seber, Dogan; Ledford, Joey; Johnson, Michael; Virgilio, Martin; Holahan, Vincent; Bergman, Thomas
Subject: Seismic Q&As March 17th 2am update

All,

000|347

As promised, a sharepoint site has been set up where our friends in NRR will be posting the latest version of the Seismic Q&A document on an ongoing basis. If someone would prefer to use the sharepoint site, instead of being on this distribution list, please let me know...
http://portal.nrc.gov/edo/nrr/NRR%20TA/FAQ%20Related%20to%20Events%20Occuring%20in%20Japan/Forms/AllItems.aspx

This latest update has a number of new questions (not many with answers today, but we are working hard). A high priority question we are working on is "how many plants are near a mapped active fault". We're focusing on anything within 50 miles. We're also pulling relevant questions from the congressional inquiries we just received; and will also give these high priority to support any needs by NRR.

Many new figures and some draft fact sheets have added to the "additional information" section. These include the NRO half of a tsunami fact sheet...a description of the tsunami research is still to come from RES.

Some good news: Yesterday's version seems to have been widely forwarded around the agency. So, we are also starting to get some excellent questions from staff looking forward. This is allowing us to feel that we are finally getting out in front of things to a small degree. Also, our team has grown and we now have someone acting as source of seismic expertise for the 11pm to 7 am shift. This means that we now have seismic experts available to the RST and OPA at the Op Center 24 hours, with 2 people during the day. That extra support is allowing us to get this out at least an hour earlier today ☺

We are continuing to compile the questions that come in and update the seismic Q&A document. If you have suggested changes, or want to provide missing answers, please forward them to me for compilation.

This is a living document and will be updated daily in the foreseeable future.

Happy St. Paddy's Day. May the world (especially our friends in Japan) have the luck of the Irish today.

Cheers,
Annie

Dr. Annie Kammerer, PE
Senior Seismologist and Earthquake Engineer
US Nuclear Regulatory Commission
Office of Nuclear Regulatory Research
Washington DC 20555
(b)(6) mobile
BB

From: Kammerer, Annie
Sent: Tuesday, March 15, 2011 3:41 AM
To: Hiland, Patrick; Skeen, David
Cc: Howe, Allen; Nelson, Robert; Stutzke, Martin; Giitter, Joseph; Rihm, Roger; McDermott, Brian; Hasselberg, Rick; Kammerer, Annie; Chokshi, Nilesh; Munson, Clifford; Cook, Christopher; Flanders, Scott; Ross-Lee, MaryJane; Brown, Frederick; Giitter, Joseph; Howe, Allen; Case, Michael; Ruland, William; Dudes, Laura; Karas, Rebecca; Ake, Jon; Munson, Clifford; Hogan, Rosemary; Uhle, Jennifer; Marshall, Michael; Uselding, Lara; Randall, John; Allen, Don; Burnell, Scott; Hayden, Elizabeth; Pires, Jose; Graves, Herman; Candra, Hernando; Murphy, Andrew; Murphy, Andrew; Pires, Jose; Hogan, Rosemary; Sheron, Brian; Dricks, Victor; Warnick, Greg; Reynoso, John; Lantz, Ryan; Markley, Michael
Subject: latest version of Q&As

All,

This is the first draft of the seismic-specific Q&As. It is pretty rough and there are many answers still missing, but people have contributed a lot and we thought it may be useful for many people trying to answer questions coming in.

We are continuing to compile the questions that come in and update the seismic Q&A document. If you have suggested changes, or want to provide missing answers, please forward them to me for compilation.

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Annie

Dr. Annie Kammerer, PE
Senior Seismologist and Earthquake Engineer
US Nuclear Regulatory Commission
Office of Nuclear Regulatory Research
Washington DC 20555
(b)(6) [redacted] mobile
BB

Nelson, Robert

From: Nelson, Robert
Sent: Friday, March 18, 2011 4:21 PM
To: Leeds, Eric
Subject: FYI: Seismic Q&As March 17th 2am update
Attachments: NRC QA.doc

Attached is the latest from NSIR. Trish is on her way to OPA to get it "blessed."

NELSON

From: Milligan, Patricia
Sent: Friday, March 18, 2011 4:16 PM
To: Nelson, Robert
Subject: Fw: Seismic Q&As March 17th 2am update

Sent from my NRC Blackberry
Patricia A Milligan, CHP RPh
(b)(6)

From: Milligan, Patricia
To: Howe, Allen
Cc: McDermott, Brian
Sent: Fri Mar 18 12:51:23 2011
Subject: RE: Seismic Q&As March 17th 2am update

Allan
Please consider the attached question for the Q&As

From: Howe, Alle..
Sent: Thursday, March 17, 2011 3:43 PM
To: Doane, Margaret; Westreich, Barry; Gratton, Christopher; Boska, John; Scott, Michael; Wittick, Susan; Merzke, Daniel; Deegan, George; Williams, Kevin; Milligan, Patricia; Bajwa, Chris; Andersen, James
Subject: FW: Seismic Q&As March 17th 2am update

Current version of Q&A from Ops center.

Allen

From: Kammerer, Annie
Sent: Thursday, March 17, 2011 2:36 AM
To: Kammerer, Annie; Hiland, Patrick; Skeen, David; Case, Michael; RST01 Hoc
Cc: Howe, Allen; Nelson, Robert; Stutzke, Martin; Giitter, Joseph; Rihm, Roger; McDermott, Brian; Hasselberg, Rick; Chokshi, Nilesh; Munson, Clifford; Cook, Christopher; Flanders, Scott; Ross-Lee, MaryJane; Brown, Frederick; Giitter, Joseph; Howe, Allen; Ruland, William; Dudes, Laura; Karas, Rebecca; Ake, Jon; Munson, Clifford; Hogan, Rosemary; Uhle, Jennifer; Marshall, Michael; Uselding, Lara; Randall, John; Allen, Don; Burnell, Scott; Hayden, Elizabeth; Pires, Jose; Graves, Herman; Candra, Hernando; Murphy, Andrew; Murphy, Andrew; Pires, Jose; Hogan, Rosemary; Sheron, Brian; Dricks, Victor; Warnick, Greg; Reynoso, John; Lantz, Ryan; Markley, Michael; Orders, William; Santiago, Patricia; Snodderly, Michael; Baggett, Steven; Sosa, Belkys; Davis, Roger; Franovich, Mike; Castleman, Patrick; Sharkey, Jeffry; Boska, John; Ma, John; Tegeler, Bret; Patel, Pravin; Shams, Mohamed; Morris, Scott; Brenner, Eliot; Harrington, Holly;

000/348

Seber, Dogan; Ledford, Joey; Johnson, Michael; Virgilio, Martin; Holahan, Vincent; Bergman, Thomas
Subject: Seismic Q&As March 17th 2am update

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Annie

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US Nuclear Regulatory Commission
Office of Nuclear Regulatory Research
Washington DC 20555
(b)(6) mobile
BB

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To: Hiland, Patrick; Skeen, David
Cc: Howe, Allen; Nelson, Robert; Stutzke, Martin; Giitter, Joseph; Rihm, Roger; McDermott, Brian; Hasselberg, Rick; Kammerer, Annie; Chokshi, Nilesh; Munson, Clifford; Cook, Christopher; Flanders, Scott; Ross-Lee, MaryJane; Brown, Frederick; Giitter, Joseph; Howe, Allen; Case, Michael; Ruland, William; Dudes, Laura; Karas, Rebecca; Ake, Jon; Munson, Clifford; Hogan, Rosemary; Uhle, Jennifer; Marshall, Michael; Uselding, Lara; Randall, John; Allen, Don; Burnell, Scott; Hayden, Elizabeth; Pires, Jose; Graves, Herman; Candra, Hernando; Murphy, Andrew; Murphy, Andrew; Pires, Jose; Hogan, Rosemary; Sheron, Brian; Dricks, Victor; Warnick, Greg; Reynoso, John; Lantz, Ryan; Markley, Michael
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Annie

Dr. Annie Kammerer, PE
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US Nuclear Regulatory Commission
Office of Nuclear Regulatory Research
Washington DC 20555
(b)(6) mobile
BB

Nelson, Robert

From: Nelson, Robert
Sent: Friday, March 18, 2011 4:23 PM
To: Milligan, Patricia
Cc: Leeds, Eric
Subject: Action: Seismic Q&As March 17th 2am update

When you get OPA's approval, please send that version to Eric Leed's in addition to me and inform the Ops Center Liaison Team

NELSON

From: Milligan, Patricia
Sent: Friday, March 18, 2011 4:16 PM
To: Nelson, Robert
Subject: Fw: Seismic Q&As March 17th 2am update

Sent from my NRC Blackberry
Patricia A Milligan, CHP RPh
(b)(6)

From: Milligan, Patricia
To: Howe, Allen
Cc: McDermott, Brian
Sent: Fri Mar 18 12:51:23 2011
Subject: RE: Seismic Q&As March 17th 2am update

Allan
Please consider the attached question for the Q&As

From: Howe, Allen
Sent: Thursday, March 17, 2011 3:43 PM
To: Doane, Margaret; Westreich, Barry; Gratton, Christopher; Boska, John; Scott, Michael; Wittick, Susan; Merzke, Daniel; Deegan, George; Williams, Kevin; Milligan, Patricia; Bajwa, Chris; Andersen, James
Subject: FW: Seismic Q&As March 17th 2am update

Current version of Q&A from Ops center.

Allen

From: Kammerer, Annie
Sent: Thursday, March 17, 2011 2:36 AM
To: Kammerer, Annie; Hiland, Patrick; Skeen, David; Case, Michael; RST01 Hoc
Cc: Howe, Allen; Nelson, Robert; Stutzke, Martin; Giitter, Joseph; Rihm, Roger; McDermott, Brian; Hasselberg, Rick; Chokshi, Nilesh; Munson, Clifford; Cook, Christopher; Flanders, Scott; Ross-Lee, MaryJane; Brown, Frederick; Giitter, Joseph; Howe, Allen; Ruland, William; Dudes, Laura; Karas, Rebecca; Ake, Jon; Munson, Clifford; Hogan, Rosemary; Uhle, Jennifer; Marshall, Michael; Uselding, Lara; Randall, John; Allen, Don; Burnell, Scott; Hayden, Elizabeth; Pires, Jose; Graves, Herman; Candra, Hernando; Murphy, Andrew; Murphy, Andrew; Pires, Jose; Hogan, Rosemary; Sheron, Brian; Dricks, Victor; Warnick, Greg; Reynoso, John; Lantz, Ryan; Markley, Michael; Orders, William; Santiago, Patricia; Snodderly, Michael; Baggett, Steven; Sosa, Belkys; Davis, Roger; Franovich, Mike; Castleman, Patrick; Sharkey, Jeffry;

000349

Boska, John; Ma, John; Tegeler, Bret; Patel, Pravin; Shams, Mohamed; Morris, Scott; Brenner, Eliot; Harrington, Holly; Seber, Dogan; Ledford, Joey; Johnson, Michael; Virgilio, Martin; Holahan, Vincent; Bergman, Thomas
Subject: Seismic Q&As March 17th 2am update

All,

As promised, a sharepoint site has been set up where our friends in NRR will be posting the latest version of the Seismic Q&A document on an ongoing basis. If someone would prefer to use the sharepoint site, instead of being on this distribution list, please let me know...
http://portal.nrc.gov/edo/nrr/NRR%20TA/FAQ%20Related%20to%20Events%20Occuring%20in%20Japan/Forms/AllItems.aspx

This latest update has a number of new questions (not many with answers today, but we are working hard). A high priority question we are working on is "how many plants are near a mapped active fault". We're focusing on anything within 50 miles. We're also pulling relevant questions from the congressional inquiries we just received; and will also give these high priority to support any needs by NRR.

Many new figures and some draft fact sheets have added to the "additional information" section. These include the NRO half of a tsunami fact sheet...a description of the tsunami research is still to come from RES.

Some good news: Yesterday's version seems to have been widely forwarded around the agency. So, we are also starting to get some excellent questions from staff looking forward. This is allowing us to feel that we are finally getting out in front of things to a small degree. Also, our team has grown and we now have someone acting as source of seismic expertise for the 11pm to 7 am shift. This means that we now have seismic experts available to the RST and OPA at the Op Center 24 hours, with 2 people during the day. That extra support is allowing us to get this out at least an hour earlier today ☺

We are continuing to compile the questions that come in and update the seismic Q&A document. If you have suggested changes, or want to provide missing answers, please forward them to me for compilation.

This is a living document and will be updated daily in the foreseeable future.

Happy St. Paddy's Day. May the world (especially our friends in Japan) have the luck of the Irish today.

Cheers,
Annie

Dr. Annie Kammerer, PE
Senior Seismologist and Earthquake Engineer
US Nuclear Regulatory Commission
Office of Nuclear Regulatory Research
Washington DC 20555
(b)(6) mobile
BB

From: Kammerer, Annie
Sent: Tuesday, March 15, 2011 3:41 AM
To: Hiland, Patrick; Skeen, David
Cc: Howe, Allen; Nelson, Robert; Stutzke, Martin; Giitter, Joseph; Rihm, Roger; McDermott, Brian; Hasselberg, Rick; Kammerer, Annie; Chokshi, Nilesh; Munson, Clifford; Cook, Christopher; Flanders, Scott; Ross-Lee, MaryJane; Brown, Frederick; Giitter, Joseph; Howe, Allen; Case, Michael; Ruland, William; Dudes, Laura; Karas, Rebecca; Ake, Jon; Munson, Clifford; Hogan, Rosemary; Uhle, Jennifer; Marshall, Michael; Uselding, Lara; Randall, John; Allen, Don; Burnell, Scott; Hayden, Elizabeth; Pires, Jose; Graves, Herman; Candra, Hernando; Murphy, Andrew; Murphy, Andrew; Pires, Jose;

Hogan, Rosemary; Sheron, Brian; Dricks, Victor; Warnick, Greg; Reynoso, John; Lantz, Ryan; Markley, Michael
Subject: latest version of Q&As

All,

This is the first draft of the seismic-specific Q&As. It is pretty rough and there are many answers still missing, but people have contributed a lot and we thought it may be useful for many people trying to answer questions coming in.

We are continuing to compile the questions that come in and update the seismic Q&A document. If you have suggested changes, or want to provide missing answers, please forward them to me for compilation.

This is a living document and will be updated daily in the foreseeable future.

Annie

Dr. Annie Kammerer, PE
Senior Seismologist and Earthquake Engineer
US Nuclear Regulatory Commission
Office of Nuclear Regulatory Research
Washington DC 20555
(b)(6) mobile
BB

Nelson, Robert

From: Nelson, Robert
Sent: Friday, March 18, 2011 3:55 PM
To: Anderson, Joseph
Subject: RE: Talking Points (3-17 (7:30 p.m. EDT))

I think I have it and I've posted in to our NRR SharePoint site

NELSON

From: Anderson, Joseph
Sent: Friday, March 18, 2011 3:44 PM
To: LIA06 Hoc; Nelson, Robert; Thaggard, Mark
Cc: Kahler, Robert; Williams, Kevin
Subject: Re: Talking Points (3-17 (7:30 p.m. EDT))

Nelson - When I can get to my account over here at USAID, I will send you what was developed by FEMA, reviewed by 3:40:11 PM and EP, and sent to NRC/FEMA regions for distribution to States/locals.

Both Bob and I will be on 12-hour shifts at USAID over the weekend. However, I will be available via Blackberry to discuss further (b)(6)

From: LIA06 Hoc
To: Nelson, Robert
Cc: LIA06 Hoc; Anderson, Joseph; Kahler, Robert
Sent: Fri Mar 18 15:32:30 2011
Subject: RE: Talking Points (3-17 (7:30 p.m. EDT))

You should probably work with the EP staff (Robert Kahler or Joe Anderson) in developing an appropriate response. The LT role is coordinating with our Federal partners.

Mark Thaggard
Liaison Team Director
U.S. Nuclear Regulatory Commission
Operations Center

From: Nelson, Robert
Sent: Friday, March 18, 2011 12:[illegible] PM
To: LIA06 Hoc
Subject: FYI: Talking Points (3-17 (7:30 p.m. EDT))

Mark Lombard:

There is a get deal of angst about getting the Q re: the 50 mike EPZ finalized & releasable. Is the Liaison Team involved? If so, what's the status. If not, who should I talk to?

NELSON

From: Markley, Michael
Sent: Friday, March 18, 2011 11:35 AM

000350

To: Nelson, Robert
Subject: FW: Talking Points (3-17 (7:30 p.m. EDT))

Attached are the draft OPA talking points.

From: LIA05 Hoc
Sent: Friday, March 18, 2011 9:44 AM
To: Markley, Michael
Subject: FW: Talking Points (3-17 (7:30 p.m. EDT))

Per your request.

FEMA REP Liaison
NRC Operations Center
(301) 816-5187

******FOR OFFICIAL USE ONLY******
DO NOT RELEASE OUTSIDE OF THE FEDERAL FAMILY

From: OST05 Hoc
Sent: Friday, March 18, 2011 9:43 AM
To: LIA05 Hoc
Subject: FW: Talking Points (3-17 (7:30 p.m. EDT))

From: OST05 Hoc
Sent: Friday, March 18, 2011 7:55 AM
To: Nguyen, Quynh; Meighan, Sean
Cc: LIA04 Hoc; Barker, Allan; Browder, Rachel; Erickson, Randy; Logaras, Harral; Maier, Bill; McNamara, Nancy; Tifft, Doug; Trojanowski, Robert; Woodruff, Gena; Collins, Elmo; Dean, Bill; 'Heck, Jared'; McCree, Victor; Pederson, Cynthia; Satorius, Mark; Easson, Stuart; Flannery, Cindy; Lukes, Kim; Maupin, Cardelia; Noonan, Amanda; OST05 Hoc; Rautzen, William; Rivera, Alison; Ryan, Michelle; Turtil, Richard; Virgilio, Rosetta
Subject: Talking Points (3-17 (7:30 p.m. EDT))

Sean and Quynh –

Please update the file on the Sharepoint site with the attached Talking Points.

Kim Lukes
State Liaison – Liaison Team
Incident Response Center

Nelson, Robert

From: Nelson, Robert)
Sent: Friday, March 18, 2011 3:54 PM
To: LIA08 Hoc
Subject: RE: Query: Q & A Coordination
Attachments: image001.png

OK. Got it.

NELSON

From: LIA08 Hoc
Sent: Friday, March 18, 2011 3:51 PM
To: Nelson, Robert
Cc: LIA04 Hoc; LIA06 Hoc; LIA02 Hoc
Subject: RE: Query: Q & A Coordination

Nelson, please be mindful that, as Mark indicated below, the LT's role is to coordinate the review of Qs and As by the Regional State Liaison Officers (RSLOs) and our partners in FEMA and DOE. When the list of Qs and As is complete, please send it to us so we can coordinate that review.
Thanks,
Rani

>>>
Hey Nelson,
Here is a list of Qs and As that are good starting point for the annual assessment public meetings and open house events that will be conducted around the plants starting next week.
Rani

From: LIA06 Hoc
Sent: Friday, March 18, 2011 3:27 PM
To: Nelson, Robert
Cc: LIA08 Hoc; LIA04 Hoc
Subject: RE: Query: Q & A Coordination

The LT role would be coordinating the review of the Q/A with FEMA, the RSLOs, and other Federal agencies.

Mark Thaggard
Liaison Team Director
U.S. Nuclear Regulatory Commission
Operations Center

From: LIA04 Hoc
Sent: Friday, March 18, 2011 3:21 PM
To: LIA06 Hoc
Cc: OST05 Hoc
Subject: FW: Query: Q & A Coordination

Fyi...

000|351

From: Nelson, Robert
Sent: Friday, March 18, 2011 3:19 PM
To: LIA01 Hoc; LIA02 Hoc; LIA03 Hoc; LIA04 Hoc; LIA05 Hoc; LIA07 Hoc; LIA08 Hoc; LIA09 Hoc; LIA10 Hoc; LIA11 Hoc; LIA12 Hoc
Subject: FW: Query: Q & A Coordination

Sorry for the shot gun approach. Please ensure the Liaison Team Director sees this.

NELSON

From: Nelson, Robert
Sent: Friday, March 18, 2011 2:28 PM
To: LIA06 Hoc
Cc: Meighan, Sean; Nguyen, Quynh; Markley, Michael; Thomas, Eric
Subject: Query: Q & A Coordination

Liaison Team Director:

As you may be aware, Eric Leeds has tasked me with being the Coordinator for NRR External Communications relating to the events in Japan. We are working on Qs & As to support EOC meetings the regions will begin next week.

What is the Liaison Team's role in developing/reviewing Qs & As and how can we best coordinate with you?

R.A. Nelson

Robert A. Nelson
Deputy Director
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation
U.S.NRC
United States Nuclear Regulatory Commission
Protecting People and the Environment
E-mail: robert.nelson@nrc.gov | Office: (301) 415-1453 | Cell: (b)(6) | Fax: (301) 415-2102|

Nelson, Robert

From: Nelson, Robert
Sent: Friday, March 18, 2011 3:30 PM
To: LIA06 Hoc
Subject: RE: Query: Q & A Coordination
Attachments: image001.png

So – we should sent any draft Q&As we develop to the Liaison Team? If so, will you coordinate OPA review as well? Do you have a list of Qs & As in process? If so, how would we access it so we don't duplicate effort.

If you have a minute, please call me to discuss (X7298)

NELSON

From: LIA06 Hoc
Sent: Friday, March 18, 2011 3:27 PM
To: Nelson, Robert
Cc: LIA08 Hoc; LIA04 Hoc
Subject: RE: Query: Q & A Coordination

The LT role would be coordinating the review of the Q/A with FEMA, the RSLOs, and other Federal agencies.

Mark Thaggard
Liaison Team Director
U.S. Nuclear Regulatory Commission
Operations Center

From: LIA04 Hoc
Sent: Friday, March 18, 2011 3:21 PM
To: LIA06 Hoc
Cc: OST05 Hoc
Subject: FW: Query: Q & A Coordination

Fyi...

From: Nelson, Robert
Sent: Friday, March 18, 2011 3:19 PM
To: LIA01 Hoc; LIA02 Hoc; LIA03 Hoc; LIA04 Hoc; LIA05 Hoc; LIA07 Hoc; LIA08 Hoc; LIA09 Hoc; LIA10 Hoc; LIA11 Hoc; LIA12 Hoc
Subject: FW: Query: Q & A Coordination

Sorry for the shot gun approach. Please ensure the Liaison Team Director sees this.

NELSON

From: Nelson, Robert
Sent: Friday, March 18, 2011 2:28 PM
To: LIA06 Hoc
Cc: Meighan, Sean; Nguyen, Quynh; Markley, Michael; Thomas, Eric
Subject: Query: Q & A Coordination

000/352

Liaison Team Director:

As you may be aware, Eric Leeds has tasked me with being the Coordinator for NRR External Communications relating to the events in Japan. We are working on Qs & As to support EOC meetings the regions will begin next week.

What is the Liaison Team's role in developing/reviewing Qs & As and how can we best coordinate with you?

R. A. Nelson

Robert A. Nelson
Deputy Director
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation
U.S.NRC
United States Nuclear Regulatory Commission
Protecting People and the Environment
E-mail: robert.nelson@nrc.gov | Office: (301) 415-1453 | Cell: (b)(6) | Fax: (301) 415-2102|

From: Trapp, James
To: Hughart, Joe
Cc: Ruland, William; McGinty, Tim; Bloom, Steven; Monninger, John; Cook, William
Subject: RE: Fwd: URGENT: COOLING SOLUTION
Date: Friday, March 18, 2011 8:08:59 PM

Thanks Joe - I'll have the guys check it out.

From: Hughart, Joe [jhughart@ofda.gov]
Sent: Friday, March 18, 2011 3:37 PM
To: Trapp, James
Subject: Fw: Fwd: URGENT: COOLING SOLUTION

Jim, please see message below. Thoughts?

Best,
- Joe

From: Lanakila Achong <lanakila@in-fog.com>
To: Hughart, Joe
Cc: Beed, John [USAID]; eivy <eivy@in-fog.com>
Sent: Fri Mar 18 15:28:58 2011
Subject: Fwd: URGENT: COOLING SOLUTION
Gentlemen,

This is the email we also sent to the Japanese Embassy in Washington. We were directed your way by the Naval Sea Systems Command. Our containment system WILL work to cool down and maintain cooling of the nuclear systems in Japan, it will work with sea or fresh water and we would like to donate it to the effort.

We're in the business of safety and saving lives, please help us do so as soon as possible for the people in jeopardy in Japan and around the world.

Thank You!

Lanakila (Kila) Achong
Project Manager
International Fog, Inc.
http://www.in-fog.com/
888.524.4434
CELL: (b)(6)

---------- Forwarded message ----------
From: **Lanakila Achong** <lanakila@in-fog.com>
Date: Fri, Mar 18, 2011 at 11:38 AM
Subject: URGENT: COOLING SOLUTION
To: earthquake@ws.mofa.go.jp

Urgent,

We are from International Fog, Inc. http://www.in-fog.com/index.php and WE CAN provide you with a solution to cooling down the nuclear sites in trouble in Japan

Currently our 1" and 1.5" Containment System nozzles are used by Oil, Gas and Electric companies to protect hot spot areas such as pump rows and even electrical substations.
http://www.in-fog.com/industrial-containment-system.php

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We can make an 8" version of our nozzle to be installed on a fixed water supply system.

EACH NOZZLE WILL CREATE A 100 TO 125 FT. FULL CONE UNINTERRUPTED FOG PATTERN THAT WILL COOL EACH SYSTEM AND PROVIDE A BARRIER THAT REDUCES HEAT BY 90%

--

Lanakila (Kila) Achong
Project Manager
International Fog, Inc.
http://www.in-fog.com/
888.524.4434
CELL: (b)(6)

From: Smith, Brooke
To: Foggie, Kirk; Foster, Jack; Devercelly, Richard; Monninger, John; Kolb, Timothy; Ulses, Anthony; Trapp, James; Cook, William; Nakanishi, Tony; Casto, Chuck
Subject: Calc on sand in SFP
Date: Friday, March 18, 2011 10:55:53 AM
Importance: High

We have been requested to send the calculations done on putting sand in the SFP. I'm not sure who has this information or in what format it is in. It needs to be sent to:
Nakamura.kazuyuki@tepco.co.jp
Yoshihiko.oishi@cas.go.jp

Sent from an NRC Blackberry.
Brooke G. Smith
(b)(6)

000354

From: lisa.makosewski@gsa.gov
Subject: Fw: Japan Earthquake and Pacific Tsunami
Date: Friday, March 18, 2011 3:35:41 PM

To all,

There are two parts to this message: First, please be sure to read the information from the American Red Cross regarding their response to the disaster in Japan. Second, please read the caution from the FBI regarding choosing reputable and legitimate organizations for your charitable donations.

Thank you.

Lisa

Lisa C. Makosewski
Executive Director
Philadelphia Federal Executive Board
Federal Building, Room 3456
600 Arch Street
Philadelphia, PA 19106

215-861-3665
215-861-3667 (fax)

----- Forwarded by Lisa Makosewski/NON-GSA/3A/R03/GSA/GOV on 03/18/2011 03:24 PM -----

Good afternoon,

In response to several inquiries regarding the ongoing situation in Japan, here is the most recent information available. I have highlighted the portion which pertains to the role of American Red Cross Biomedical Services in the disaster response. As volunteer leaders, it is our hope that you share this message with others as all of our hearts go out to the individuals affected by the disaster. Thank you.

BACKGROUND

On March 11, a record 9.0 magnitude earthquake struck near the Japanese city of Sendai. It generated a powerful 32-foot tsunami which struck northern Japan, surged a quarter of a mile inland and caused widespread destruction to coastal areas and communities. High magnitude aftershocks continue to hit the area. There was also damage to area nuclear power plants, causing a third emergency, the threat of nuclear radiation exposure.

KEY DEVELOPMENTS

Reported casualties continue to increase. On March 16, the Government of Japan reported a death toll of 3,676 people and 7,844 people missing due to the earthquake and tsunami.

Cold weather and snow is now complicating the ongoing emergency relief operation, which was already challenged by continued aftershocks, fuel shortages and inaccessible roads. Emergency teams still have not been able to reach all the affected areas due to logistical challenges.

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As concerns mount regarding the damage to nuclear power plants, the Japanese Red Cross continues to focus on providing relief and assistance to the hundreds of thousands of people who have been evacuated due to the nuclear emergency, earthquake and tsunami.

NUMBERS AT A GLANCE1 Deaths	3,676	Government of Japan – 3/16/11
People Missing	7,844	Government of Japan – 3/16/11
People in Shelters	416,000	Government of Japan – 3/15/11
American Red Cross Commitment	1 advisor $10 million	American Red Cross – 3/15/11

CURRENT SITUATION

Snow and freezing temperatures have hit the most affected areas. There are concerns for people who are still unreached by rescue workers as well as those living in evacuation centers. Many do not have protective clothing or blankets and heating is insufficient.

As of March 15, the Government of Japan reports that at least 416,000 people are currently being housed in 2,500 government-run shelters located in schools and public buildings in 11 prefectures.

As of March 15, more than 4,600 houses have been totally destroyed and 49,000 damaged throughout the affected areas. Approximately 843,000 homes remain without electricity and 1.4 million homes are without water.

Transportation systems remain paralyzed and roads cut off, causing food and fuel shortages. Many small communities remain stranded.

While search and rescue are the priority, the government reports that the immediate needs continue to be food, blankets, water, fuel and sanitation.

The Government of Japan has ordered temporary shelters to be built and is working with the private sector merchants and food producers make food stocks available and to raise production levels to meet needs. It is also working with local governments in non-affected prefectures to release stocks of relief items for the response.

GLOBAL RED CROSS AND RED CRESCENT NETWORK RESPONSE

Japanese Red Cross

Volunteers continue to distribute relief items and provide support to those affected. Under the nation's response plan, the role of the Japanese Red Cross is to provide healthcare, emotional support activities, relief items and family linking services to support those affected, including those in government shelters.

The Japanese Red Cross has deployed 115 medical response teams with approximately 730 doctors, counselors, nurses and support staff. It is operating field and mobile health clinics providing medical and emotional support to affected people.

The Japanese Red Cross also has a specialized psychological support team operating in Ishinomaki hospital in Miyagi prefecture, helping survivors who have lost loved ones in the disaster.

A number of the Japanese Red Cross branches are equipped with special equipment to respond to nuclear, biological or chemical disasters in support of the government. In addition, there is a specialist medical team at Nagasaki Red Cross hospital to treat effects of radiation exposure.

The Japanese Red Cross has more than two million registered volunteers and 47 chapters, and operates 104 hospitals, 26 nursing schools and 212 blood centers nationwide.

The Japanese Red Cross is is promoting family linking through the International Committee of the Red Cross website – www.familylinks.icrc.org.

American Red Cross

The American Red Cross has committed an initial $10 million to the Japanese Red Cross to assist its ongoing efforts to provide medical care and relief assistance following the earthquake and tsunami.

The American Red Cross has provided an advisor to a high-level support and liaison team to the Japanese Red Cross. The group is led by the International Federation of Red Cross and Red Crescent Societies and consists of representatives from several Red Cross and Red Crescent national societies.

To date, the American Red Cross has not received any requests for blood from the Japanese Red Cross, the Japanese government or the U.S. State Department. At this time, we are not collecting blood from individuals in America to go to Japan and we do not anticipate the need for a general blood donor appeal to support our preparedness efforts. Should the need arise, the Red Cross will do everything it can to assist Japan with their request.

If you are personally interested in contributing a monetary donation please visit **www.redcross.org** and **donate to Japan Earthquake and Pacific Tsunami.** You can also donate $10 by texting REDCROSS to 90999 to support our disaster relief efforts in Japan and tsunami throughout the Pacific.

The American Red Cross is in direct communication with the Japanese Red Cross as they update their needs based on ongoing assessments and response activities.

International Federation of Red Cross and Red Crescent Societies (International Federation)

The International Federation's Asia Pacific Disaster Management Unit in Kuala Lumpur, Malaysia is leading the International Federation's coordination activities in support of the Japanese Red Cross response.

United Nations and Government Response

Government of Japan

The Government of Japan is leading the response and has mobilized thousands of troops, planes and ships for a massive operation. In addition to search and rescue efforts, assisted by a number of international search and rescue teams, it is also operating shelters, deploying emergency medical teams and providing food and relief supplies.

U.S. Government

The U.S. Government has provided two search and rescue teams to assist response efforts as well as two nuclear experts. The U.S. Agency for International Development's Office of Foreign Disaster Assistance has deployed a Disaster Assistance Response Team to coordinate the U.S. Government response.

The U.S. military has deployed ships to the area to assist the relief effort and provide emergency supplies.

United Nations (UN)

The United Nations has deployed its Disaster Assessment and Coordination (UNDAC) team to assist the Government of Japan by coordinating the international urban search and rescue teams as well as incoming international relief goods and services in order to limit unsolicited contributions.

The information in this report is compiled from a number of sources including the International Federation of Red Cross and Red Crescent Societies, the United Nations Office for the Coordination of Humanitarian Affairs, the U.S. Agency for International Development and involved national Red Cross/Red Crescent societies. The American Red Cross strives to provide the most accurate and timely information possible; however, all information should be considered conditional until a final report has been issued.

Wendy C. Vara I Director, Volunteer Administration

American Red Cross

Penn-Jersey Blood Services Region

700 Spring Garden Street, Philadelphia, PA 19123

(215) 451-4197(p)/ (b)(6) (c)

(215) 451-2546 (f) wvara@usa.redcross.org

Web | redcrossblood.org

Facebook | www.facebook.com/redcrossblood
Twitter | www.twitter.com/ARCPennJersey

mailto:wvara@usa.redcross.org

Colleagues: FYI- just a reminder that the Administration is directing individuals who wish to contribute to visit www.usaid.gov to learn about mechanisms in which to help. You may also contact with your local Combined Federal Campaign (CFC) representative for advice on meaningful giving. www.opm.gov/cfc

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The Federal Bureau of Investigation reminds the public to use caution when making donations in the aftermath of natural disasters. Unfortunately, criminals can exploit these tragedies for their own gain by sending fraudulent e-mails and creating phony websites designed to solicit contributions. The FBI and the National Center for Disaster Fraud have an existing tip line to receive information from the public about suspected fraud associated with the earthquake and tsunami that affected Japan. Tips should be reported to the National Center for Disaster Fraud, (866) 720-5721. The line is staffed by a live operator 24 hours a day, seven days a week. Additionally,

e-mails can be sent to disaster@leo.gov, and information can be faxed to (225) 334-4707. More than 350 fraudulent websites claiming to be related to the disaster relief have been created in just the first week.

The National Center for Disaster Fraud was created by the Department of Justice to investigate, prosecute, and deter fraud in the wake of Hurricane Katrina, when billions of dollars in federal disaster relief poured into the Gulf Coast region. Now, its mission has expanded to include suspected fraud from any natural or man-made disaster. More than 20 federal agencies, including the FBI, participate in the NCDF, which allows the center to act as a centralized clearinghouse of information related to disaster relief fraud.

The FBI continues to remind the public to perform due diligence before giving contributions to anyone soliciting donations or individuals offering to provide assistance to the people of Japan. Solicitations can originate from e-mails, websites, door-to-door collections, flyers, mailings, telephone calls, and other similar methods.

Consumers can also report suspicious e-mail solicitations or fraudulent websites to the FBI's Internet Crime Complaint Center, www.ic3.gov.

Before making a donation of any kind, consumers should adhere to certain guidelines. Check out the FBIs tips at: :

http://www.fbi.gov/news/pressrel/press-releases/tips-on-avoiding-fraudulent-charitable-contribution-schemes

From: Dean, Bill
To: Wittick, Brian; Leeds, Eric; Sheron, Brian
Cc: Muessle, Mary; Lew, David; Grobe, Jack; Boger, Bruce; Uhle, Jennifer; Andersen, James; Virgilio, Martin; Meighan, Sean; Nguyen, Quynh; Weber, Michael; Bowman, Gregory; Miller, Charles; McNamara, Nancy; Tifft, Doug
Subject: Re: NYS Delegation Meeting Request
Date: Friday, March 18, 2011 10:59:35 PM

Brian, reg I believes this dialog is best handled by NRR and RES. We are of course quite interested in its outcome. Thanks for the offer.
Bill Dean
Regional Administrator
Region I. USNRC
Sent from NRC BlackBerry

From: Wittick, Brian
To: Dean, Bill; Leeds, Eric; Sheron, Brian
Cc: Muessle, Mary; Lew, David; Grobe, Jack; Boger, Bruce; Uhle, Jennifer; Andersen, James; Virgilio, Martin; Meighan, Sean; Nguyen, Quynh; Weber, Michael; Bowman, Gregory; Miller, Charles
Sent: Fri Mar 18 22:13:11 2011
Subject: NYS Delegation Meeting Request

Eric/Brian/Bill,

As noted below, the NYS Lt. Governor, Robert Duffy, NYS Director of Operations, Howard Glaser and NYS Deputy Secretary for Energy, Tom Congdon, will be coming to DC on Tuesday for discussions with NRC senior management. Other attendees at the meeting will include two support staffers and Hilary Jochmans, Director of the NYS Washington Office of the Governor. The original request from NY was to meet with the Chairman, but he is unavailable and asked for senior office level support.

The topic to be discussed is the September 2010 NRC report (Information Notice 2010-18: Generic Issue 199, "Implications of Updated Probabilistic Seismic Hazard Estimates in Central and Eastern U.S. on Existing Plants.") including the status of the follow up review. Link to the report is below.

Given the multiple office involvement in the report NRR and RES participation is recommended, Region 1 participation welcome. The Lt Governor will travel down from NY Tuesday morning and expects to be available late morning or afternoon. Please let me know your availability for the meeting.

Very Respectfully,
Brian Wittick
Executive Technical Assistant for Reactors, .
Office of the Executive Director for Operations
U.S. Nuclear Regulatory Commission
301-415-2496(w); (b)(6) [redacted] c)

http://adamswebsearch2.nrc.gov/idmws/DocContent.dll?library=PU_ADAMS^pbntad01&LogonID=76b41771c7675f39f80edfad53e3cf59&id=102500110

From: Dean, Bill

000 | 356

Sent: Friday, March 18, 2011 7:33 PM
To: Wittick, Brian; Leeds, Eric; Andersen, James
Cc: Muessle, Mary; Lew, David; Grobe, Jack; Boger, Bruce; Sheron, Brian; Uhle, Jennifer
Subject: Re: Meeting Request Follow Up

I believe RES assistance may be appropriate for this given the GI-199 subject matter.
Bill Dean
Regional Administrator
Region I, USNRC
Sent from NRC BlackBerry

From: Thomas Hipschman
Sent: Friday, March 18, 2011 3:04 PM
To: Brian Wittick
Subject: FW: Meeting Request Follow Up

FYI – the Chairman has agreed that a senior manager from NRR should meet with them.

Thomas Hipschman
Policy Advisor for Reactors
Office of Chairman Gregory B. Jaczko
301-415-1832

From: Pace, Patti
Sent: Friday, March 18, 2011 1:48 PM
To: Hipschman, Thomas
Cc: Bradford, Anna; Batkin, Joshua; Coggins, Angela
Subject: FW: Meeting Request Follow Up

Hi Tom,

Anna asked me to forward this to you. Can you please work with NRR to make this happen? The folks from NY are eager to confirm something ASAP.

Thanks,

Patti Pace
Assistant to Chairman Gregory B. Jaczko
U.S. Nuclear Regulatory Commission
301-415-1820 (office)
301-415-3504 (fax)

From: Hilary Jochmans [mailto:Hilary.Jochmans@exec.ny.gov]
Sent: Friday, March 18, 2011 1:42 PM
To: Pace, Patti
Cc: Thomas Congdon; Bradford, Anna; Warren, Roberta
Subject: RE: Meeting Request Follow Up

Thank you, Patti. I greatly appreciate your assistance. I certainly understand the constraints on the

Chairman's time. We would appreciate a meeting with the Senior Staff you suggest on Tuesday in person. Please let me know what other information you need from me, and then who the staffer will be and when where.

Thanks again,

Hilary

From: Pace, Patti [mailto:Patti.Pace@nrc.gov]
Sent: Friday, March 18, 2011 1:37 PM
To: Hilary Jochmans
Cc: Thomas Congdon; Bradford, Anna; Warren, Roberta
Subject: Meeting Request Follow Up

Dear Hilary,

Chairman Jaczko will not be available for a face to face meeting next week due to his role in the ongoing NRC response to the situation in Japan. He values the very good relationship between the NRC and State of New York. He has offered to make himself available for a phone call next week if that would be acceptable to Lt. Governor Duffy. If the Lt. Governor would prefer to meet with a senior NRC staff person we could work on that as an alternative.

Please let me know how you would like to proceed.

Many thanks,

Patti Pace
Assistant to Chairman Gregory B. Jaczko
U.S. Nuclear Regulatory Commission
301-415-1820 (office)
301-415-3504 (fax)

From: Hilary Jochmans [mailto:Hilary.Jochmans@exec.ny.gov]
Sent: Thursday, March 17, 2011 3:22 PM
To: Pace, Patti
Cc: Thomas Congdon
Subject: Follow up to Conversation

Hi Patti – It was great to chat with you. Glad to hear you are doing well. Thanks so much for your offer to help with this meeting request.

On Tuesday, the NYS Lt. Governor, Robert Duffy, NYS Director of Operations, Howard Glaser and NYS Deputy Secretary for Energy, Tom Congdon, would like to come to Washington to meet with the Chairman. Specifically, they would like to be briefed on the September 2010 NRC report including the status of the follow up review. If the Chairman is not available, they would like to meet with an appropriate Commissioner or senior staffer.

I greatly appreciate your assistance with this request. Please let me know if you need any

additional information.

Thanks,
Hilary

Hilary F. Jochmans, Director
New York State Washington Office of the Governor
202-434-7100

From: NRC Announcement
To: NRC Announcement
Subject: Event: Supplemental Information on Today"s All-Employees Meeting
Date: Friday, March 18, 2011 10:36:17 AM

NRC Daily Announcements — Highlighted Information and Messages

Friday March 18, 2011 | Headquarters Edition

Event: Supplemental Information on Today's All-Employees Meeting

Event: Supplemental Information on Today's All-Employees Meeting

As mentioned in a previous Network Announcement, there will be an All-Employees meeting today at 2:00 p.m. in the TWFN auditorium, led by EDO Bill Borchardt, to discuss events in Japan. VTC will be available to the regions, TTC, and headquarters satellite offices. Please note the following additional information:

- The bridgeline (call-in number: 888-820-8960; passcode (b)(6) s intended for employees who are teleworking today. If you are not working at home, please attend the meeting in person or via VTC to avoid overloading the bridgelines.
- There will be a sign-language interpreter in the auditorium for the hearing-impaired.
- The event will videotaped for later viewing.
- The slides that will be used during the presentation are available on the OEDO Sharepoint site.

(2011-03-18 00:00:00.0) View item in a new window

000 | 357

From: Virgilio, Rosetta
To: Virgilio, Martin
Subject: Re: Request from Governor Cuomo"s Office Re: Mtg w/Chairman
Date: Friday, March 18, 2011 8:31:46 AM

Ok I didn't see them cc'd

Sent from an NRC Blackberry
Rosetta O. Virgilio
(b)(6)

From: Virgilio, Martin
To: Virgilio, Rosetta
Sent: Fri Mar 18 00:41:01 2011
Subject: RE: Request from Governor Cuomo's Office Re: Mtg w/Chairman

That is why it was sent to Angela and Josh. Next Friday may not be any better than this Friday. You could use the time off now.

From: Virgilio, Rosetta
Sent: Friday, March 18, 2011 12:34 AM
To: Turtil, Richard; Piccone, Josephine; Jackson, Deborah
Subject: ACTION: Request from Governor Cuomo's Office Re: Mtg w/Chairman
Importance: High

This request needs to get to the Chairman.

(b)(6)

Sent from an NRC Blackberry
Rosetta O. Virgilio
(b)(6)

From: Virgilio, Martin
To: Virgilio, Rosetta
Sent: Fri Mar 18 00:08:58 2011
Subject: FW: Request from Governor Cuomo's Office Re: Mtg w/Chairman

I did not see you name on this

From: LIA06 Hoc
Sent: Thursday, March 17, 2011 7:25 PM
To: Coggins, Angela; Batkin, Joshua
Cc: McNamara, Nancy; Dean, Bill; Barkley, Richard; Tifft, Doug; LIA04 Hoc; Virgilio, Martin
Subject: FW: Request from Governor Cuomo's Office Re: Mtg w/Chairman
Importance: High

Please see the email from Region 1 regarding a request from the Gov. of New York to meet with the Chairman.

000|358

Mark Thaggard
Liaison Team Director
U.S. Nuclear Regulatory Commission
Operations Center

From: LIA04 Hoc
Sent: Thursday, March 17, 2011 6:48 PM
To: LIA06 Hoc
Subject: FW: Request from Governor Cuomo's Office Re: Mtg w/Chairman
Importance: High

From: McNamara, Nancy
Sent: Thursday, March 17, 2011 5:57 PM
To: LIA04 Hoc; OST05 Hoc
Cc: Lew, David; Dean, Bill; Wilson, Peter; Roberts, Darrell; Tifft, Doug; Barkley, Richard
Subject: Request from Governor Cuomo's Office Re: Mtg w/Chairman
Importance: High

Liaison Team: Received a call from Tom Condon, NY State Deputy Secretary of Energy & Environment in the Governor's Office. The NY Lieutenant Governor, Robert Duffey is requesting a meeting with the Chairman to discuss the GI-199 report and how it relates to Indian Point. The other attendees from the Governor's office would be Mr. Howard Glaser, Director of State Operations and Mr. Condon. They also made the request via their Washington D.C. office.

Mr. Condon would like me to find out if the request has been received and what dates are being offered. They are flexible.

I informed Mr. Condon of our outreach today to several of his State agency representatives and the 4-County Executives and offered was there anything the Region I staff could assist the Governor's office in while their request was being processed. He stated that the Governor's office is very pleased with the communications from the Region to his State SLO and other agency reps; however, the Governor would prefer the meeting at the Chairman's level.

-Nancy

Nelson, Robert

From: Nelson, Robert
Sent: Friday, March 18, 2011 8:11 AM
To: Landau, Mindy
Cc: Brown, Frederick; Markley, Michael; Meighan, Sean; Nguyen, Quynh; Howe, Allen; King, Mark
Subject: Recommendation: USNRC Earthquake-Tsunami Update.031811.0600EDT
Attachments: NRC Status Update 3-18 11--0600am.pdf; image001.png

We recommend that the attached SitRep be made available to the NRC staff via the internal web site. These are distributed daily by the Ops Center. Many staff are already receiving either directly from the Ops Center or by secondary distribution. We need a more consistent approach for agency wide dissemination. Can you look into this?

R. A. Nelson

Robert A. Nelson
Deputy Director
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation
U.S.NRC
United States Nuclear Regulatory Commission
Protecting People and the Environment
E-mail: robert.nelson@nrc.gov | Office: (301) 415-1453 | Cell: (b)(6) Fax: (301) 415-2102|

From: LIA07 Hoc
Sent: Friday, March 18, 2011 6:14 AM
To: LIA07 Hoc
Subject: USNRC Earthquake-Tsunami Update.031811.0600EDT

Attached, please find a 0600 EDT from March 18 situation report from the US Nuclear Regulatory Commission's Emergency Operations Center regarding the impacts of the earthquake/tsunami on March 11, 2011.

Please note that this information is "Official Use Only" and is only being shared within the federal family.

Please call the Headquarters Operations Officer at 301-816-5100 with questions.

Thank you,

Rebecca Clinton
EBT Coordinator

000 | 359

Nelson, Robert

From: Nelson, Robert
Sent: Friday, March 18, 2011 7:42 AM
To: Virgilio, Rosetta
Subject: RE: ACTION: NGA Center in DC Requests NRC Expert Speaker for 3/22 or 3/23 and 4/4

I suggest that you approach these individuals directly.

NELSON

From: Virgilio, Rosetta
Sent: Friday, March 18, 2011 12:37 AM
To: Nelson, Robert
Subject: Fw: ACTION: NGA Center in DC Requests NRC Expert Speaker for 3/22 or 3/23 and 4/4
Importance: High

Bob - Should I be working through you on this request?

Sent from an NRC Blackberry
Rosetta O. Virgilio
(b)(6)

From: Virgilio, Rosetta
To: Harrington, Holly
Cc: Ellmers, Glenn; Landau, Mindy
Sent: Fri Mar 18 00:18:39 2011
Subject: ACTION: NGA Center in DC Requests NRC Expert Speaker for 3/22 or 3/23 and 4/4

Holly - Since sending out my initial request, I've been informed by Marty that Bob Nelson is heading up a NRC communications effort and also that Brian Sheron, Mike Johnson, Eric Leeds, and Cathy Haney have been appointed NRC Communicators. Can I approach them directly?

Sent from an NRC Blackberry
Rosetta O. Virgilio
(b)(6)

From: Landau, Mindy
To: Harrington, Holly
Cc: Ellmers, Glenn; Virgilio, Rosetta
Sent: Thu Mar 17 18:01:37 2011
Subject: Fw: NGA Center NRC expert speaker requests

Holly - what's our posture? Does Eliot have an opinion on whether we should agree to this request?

Sent from my NRC Blackberry
Mindy Landau
(b)(6)
Mindy.Landau@nrc.gov

000/360

From: Virgilio, Rosetta
To: Landau, Mindy; Ellmers, Glenn
Cc: Piccone, Josephine; Jackson, Deborah; Ryan, Michelle; Turtil, Richard
Sent: Thu Mar 17 17:17:28 2011
Subject: Fw: NGA Center NRC expert speaker requests

Mindy/Glenn - Please see below. I understand Mike Weber has suggested that "NRC ambassadors" could go out and do this sort of thing. Can you help identify who these folks are so I can move this request forward? NGA indicated they could set up a bridge line in the event NRC was unable to physically travel downtown. I did indicate staff is pretty stretched and is looking to hold a public Commission meeting next week, which might satisfy their needs; perhaps we could instead entertain the April 4 meeting.
Anything you can do to help me move this request forward would be appreciated.

Sent from an NRC Blackberry
Rosetta O. Virgilio
(b)(6)

From: Virgilio, Rosetta
To: 'gdierkers@NGA.ORG' <gdierkers@NGA.ORG>
Sent: Thu Mar 17 17:03:28 2011
Subject: Re: NGA Center NRC expert speaker requests

Thank you, Greg; I will followup and get back to you.

Sent from an NRC Blackberry
Rosetta O. Virgilio
(b)(6)

From: Dierkers, Gregory <gdierkers@NGA.ORG>
To: Virgilio, Rosetta
Cc: Gander, Sue <sgander@NGA.ORG>; MacLellan, Thomas <TMaclellan@NGA.ORG>; Ferro, Carmen <CFerro@NGA.ORG>
Sent: Thu Mar 17 16:36:04 2011
Subject: NGA Center NRC expert speaker requests

Hi Rosetta,

Thanks for your time today. We appreciate you identifying someone from the NRC to support the NGA Center's outreach to states during this busy time.

As we discussed we would like to invite the NRC to join us for **two upcoming events -- a webinar next week and a conference in early April -- to brief governors' advisors on the Japanese situation and the implications for US plants.** The events are:

1) **A webinar with governors' security and energy advisors.** NGA Center staff is planning to host a conference call next week (Tuesday 3/21 or Wednesday 3/22) to provide senior state officials with an update on the Japan situation and to answer questions as to the operations of US plants, including regulations, plant security/safety, and the emergency preparedness efforts at the US nuclear fleet. We would ask that an NRC expert join the webinar remotely; the webinar would last for 1 hour.

2) **An in-person speaker at a governors' energy advisors meeting.** NGA Center's *Governors' Energy Advisors Policy Institute* on April 4th in Arlington, Virginia. The focus of the April 4th Institute is to provide a 'Technology 101' briefing

for governors senior energy advisors. We would invite the NRC to attend in-person on April 4th from 1:45pm to 4:15pm. We would ask for a 10-15 minute presentation on the situation in Japan, the state of nuclear technology and regulations in the US, and the implications for states from the Japanese crisis. Attached is a draft agenda.

Thanks for considering both of these requests.

Sincerely,

Greg Dierkers
Program Director – Energy and Transportation
NGA Center for Best Practices
Environment, Energy and Transportation Division
202-624-7789
gdierkers@nga.org

Nelson, Robert

From: Nelson, Robert
Sent: Friday, March 18, 2011 9:36 AM
To: King, Mark; Thorp, John; Landau, Mindy; Hasselberg, Rick
Cc: Thomas, Eric; Sigmon, Rebecca; Brown, Frederick; Markley, Michael; Meighan, Sean; Nguyen, Quynh; Howe, Allen; Rihm, Roger; Ellmers, Glenn; Muessle, Mary; Andersen, James
Subject: RE: Recommendation: For USNRC Earthquake-Tsunami Update - distribution
Attachments: image001.png

I have this recommendation FORAC.

NELSON

From: King, Mark
Sent: Friday, March 18, 2011 9:33 AM
To: Thorp, John; Landau, Mindy; Nelson, Robert; Hasselberg, Rick
Cc: Thomas, Eric; Sigmon, Rebecca; Brown, Frederick; Markley, Michael; Meighan, Sean; Nguyen, Quynh; Howe, Allen; Rihm, Roger; Ellmers, Glenn; Muessle, Mary; Andersen, James
Subject: FW: Recommendation: For USNRC Earthquake-Tsunami Update - distribution

Mindy / Rick / Robert
I suggest someone consider getting the HOO or someone in the IRC to add the US NRC Emergency Operations Center Status Update (regarding the Japan events) to the NRR SharePoint site with each update placed into a separate folder - This EDO /NRR SharePoint site was established to provide FAQ / information related to events occurring in Japan... for NRC staff.
...Questions like – **What's the latest status / update information?**

NRR TA > FAQ Related to Events Occurring in Japan

FAQ Related to Events Occurring in Japan

READ THIS!!!!!!! INTERNAL USE ONLY - FOR THOSE WORKING ON ANSWERING QUESTIONS! PURPOSE: To ensure clear messages in alignment with the Chairman. Currently, Eliot Brenner, OPA, is the final "OK" for anything posted to this SharePoint Portal. **For Emergency Preparedness items, NSIR must approve**. Contributors may put draft documents in the appropriate folder. CURRENT STATUS: 2030, March 17, - **Robert Nelson (NRR)** is the SES Lead. Supported by **Sean Meighan** (301-415-1020) and **Quynh Nguyen** (301-415-5844). Our POC with Regions... Darrell Roberts (I), Julio Lara (III), Michael Hay (IV).

Sharepoint site link:
http://portal.nrc.gov/edo/nrr/NRR%20TA/FAQ%20Related%20to%20Events%20Occuring%20in%20Japan/Forms/AllItems.aspx

For your consideration,
Mark

From: Landau, Mindy
Sent: Friday, March 18, 2011 9:03 AM
To: Nelson, Robert
Cc: Brown, Frederick; Markley, Michael; Meighan, Sean; Nguyen, Quynh; Howe, Allen; King, Mark; Rihm, Roger; Ellmers, Glenn; Muessle, Mary; Andersen, James
Subject: Re: Recommendation: USNRC Earthquake-Tsunami Update.031811.0600EDT

Absolutely - I'm out of town this weekend but we'll take a look at it on Monday and suggest a better approach.

Sent from my NRC Blackberry
Mindy Landau
(b)(6)
Mindy.Landau@nrc.gov

000/361

From: Nelson, Robert
To: Landau, Mindy
Cc: Brown, Frederick; Markley, Michael; Meighan, Sean; Nguyen, Quynh; Howe, Allen; King, Mark
Sent: Fri Mar 18 08:10:30 2011
Subject: Recommendation: USNRC Earthquake-Tsunami Update.031811.0600EDT

We recommend that the attached SitRep be made available to the NRC staff via the internal web site. These are distributed daily by the Ops Center. Many staff are already receiving either directly from the Ops Center or by secondary distribution. We need a more consistent approach for agency wide dissemination. Can you look into this?

R. A. Nelson

Robert A. Nelson
Deputy Director
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation
U.S.NRC
United States Nuclear Regulatory Commission
Protecting People and the Environment
E-mail: robert.nelson@nrc.gov | Office: (301) 415-1453 | Cell (b)(6) | Fax: (301) 415-2102|

From: LIA07 Hoc
Sent: Friday, March 18, 2011 6:14 AM
To: LIA07 Hoc
Subject: USNRC Earthquake-Tsunami Update.031811.0600EDT

Attached, please find a 0600 EDT from March 18 situation report from the US Nuclear Regulatory Commission's Emergency Operations Center regarding the impacts of the earthquake/tsunami on March 11, 2011.

Please note that this information is "Official Use Only" and is only being shared within the federal family.

Please call the Headquarters Operations Officer at 301-816-5100 with questions.

Thank you,

Rebecca Clinton
EBT Coordinator

Nelson, Robert

From: Nelson, Robert
Sent: Friday, March 18, 2011 9:37 AM
To: Virgilio, Rosetta
Subject: RE: ACTION: NGA Center in DC Requests NRC Expert Speaker for 3/22 or 3/23 and 4/4

I informed Eric that he may be getting a request.

NELSON

From: Virgilio, Rosetta
Sent: Friday, March 18, 2011 12:37 AM
To: Nelson, Robert
Subject: Fw: ACTION: NGA Center in DC Requests NRC Expert Speaker for 3/22 or 3/23 and 4/4
Importance: High

Bob - Should I be working through you on this request?

Sent from an NRC Blackberry
Rosetta O. Virgilio
(b)(6)

From: Virgilio, Rosetta
To: Harrington, Holly
Cc: Ellmers, Glenn; Landau, Mindy
Sent: Fri Mar 18 00:18:39 2011
Subject: ACTION: NGA Center in DC Requests NRC Expert Speaker for 3/22 or 3/23 and 4/4

Holly - Since sending out my initial request, I've been informed by Marty that Bob Nelson is heading up a NRC communications effort and also that Brian Sheron, Mike Johnson, Eric Leeds, and Cathy Haney have been appointed NRC Communicators. Can I approach them directly?

Sent from an NRC Blackberry
Rosetta O. Virgilio
(b)(6)

From: Landau, Mindy
To: Harrington, Holly
Cc: Ellmers, Glenn; Virgilio, Rosetta
Sent: Thu Mar 17 18:01:37 2011
Subject: Fw: NGA Center NRC expert speaker requests

Holly - what's our posture? Does Eliot have an opinion on whether we should agree to this request?

Sent from my NRC Blackberry
Mindy Landau
(b)(6)
Mindy.Landau@nrc.gov

000362

From: Virgilio, Rosetta
To: Landau, Mindy; Ellmers, Glenn
Cc: Piccone, Josephine; Jackson, Deborah; Ryan, Michelle; Turtil, Richard
Sent: Thu Mar 17 17:17:28 2011
Subject: Fw: NGA Center NRC expert speaker requests

Mindy/Glenn - Please see below. I understand Mike Weber has suggested that "NRC ambassadors" could go out and do this sort of thing. Can you help identify who these folks are so I can move this request forward? NGA indicated they could set up a bridge line in the event NRC was unable to physically travel downtown. I did indicate staff is pretty stretched and is looking to hold a public Commission meeting next week, which might satisfy their needs; perhaps we could instead entertain the April 4 meeting.
Anything you can do to help me move this request forward would be appreciated.

Sent from an NRC Blackberry
Rosetta O. Virgilio
(b)(6)

From: Virgilio, Rosetta
To: 'gdierkers@NGA.ORG' <gdierkers@NGA.ORG>
Sent: Thu Mar 17 17:03:28 2011
Subject: Re: NGA Center NRC expert speaker requests

Thank you, Greg; I will followup and get back to you.

Sent from an NRC Blackberry
Rosetta O. Virgilio
(b)(6)

From: Dierkers, Gregory <gdierkers@NGA.ORG>
To: Virgilio, Rosetta
Cc: Gander, Sue <sgander@NGA.ORG>; MacLellan, Thomas <TMaclellan@NGA.ORG>; Ferro, Carmen <CFerro@NGA.ORG>
Sent: Thu Mar 17 16:36:04 2011
Subject: NGA Center NRC expert speaker requests

Hi Rosetta,

Thanks for your time today. We appreciate you identifying someone from the NRC to support the NGA Center's outreach to states during this busy time.

As we discussed we would like to invite the NRC to join us for **two upcoming events -- a webinar next week and a conference in early April -- to brief governors' advisors on the Japanese situation and the implications for US plants.** The events are:

1) **A webinar with governors' security and energy advisors.** NGA Center staff is planning to host a conference call next week (Tuesday 3/21 or Wednesday 3/22) to provide senior state officials with an update on the Japan situation and to answer questions as to the operations of US plants, including regulations, plant security/safety, and the emergency preparedness efforts at the US nuclear fleet. We would ask that an NRC expert join the webinar remotely; the webinar would last for 1 hour.

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for governors senior energy advisors. We would invite the NRC to attend in-person on April 4th from 1:45pm to 4:15pm. We would ask for a 10-15 minute presentation on the situation in Japan, the state of nuclear technology and regulations in the US, and the implications for states from the Japanese crisis. Attached is a draft agenda.

Thanks for considering both of these requests.

Sincerely,

Greg Dierkers
Program Director – Energy and Transportation
NGA Center for Best Practices
Environment, Energy and Transportation Division
202-624-7789
gdierkers@nga.org

Nelson, Robert

From: Nelson, Robert
Sent: Friday, March 18, 2011 10:03 AM
To: Schoenebeck, Greg; Sastry, Gayathri
Cc: Thomas, Eric; Meighan, Sean; Nguyen, Quynh
Subject: RE: FYI - ANOTHER Japan Sharepoint???? --- Communiction Letter
Attachments: image001.png

I can't get access.

R.A. Nelson

Robert A. Nelson
Captain, US Navy (Retired)
Deputy Director
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

U.S.NRC
United States Nuclear Regulatory Commission
Protecting People and the Environment

E-mail: robert.nelson@nrc.gov | Office: (301) 415-1453 | Cell: (b)(6) | Fax: (301) 415-2102|

From: Nguyen, Quynh
Sent: Friday, March 18, 2011 9:58 AM
To: Schoenebeck, Greg; Sastry, Gayathri
Cc: Nelson, Robert; Thomas, Eric; Meighan, Sean
Subject: FYI - ANOTHER Japan Sharepoint???? --- Communiction Letter
Importance: High

Greg and Gayathri,

Leeds has assigned Nelson as the NRR Lead for Q&As. We need to understand what is in the site, who it is for, etc...

1 – Not to redouble efforts.
2 – To prevent inadvertent release of information that may undermine Agency efforts and alignment of messages by the Chairman.

Thanks,
Quynh

From: Cohen, Shari
Sent: Friday, March 18, 2011 9:48 AM
To: Nguyen, Quynh
Subject: FW: Communiction Letter
Importance: High

Wanted you kept in the loop on this Q.

Shari Cohen, Contract Secretary
Office of Nuclear Reactor Regulation, USNRC

000/363

Room – O-13H18 / Mail Stop - O13H16M
Phone – 301-415-1270
Fax - 301 - 415-8333
Email - shari.cohen@nrc.gov

From: Sastry, Gayathri
Sent: Friday, March 18, 2011 9:41 AM
To: Steger (Tucci), Christine; Cohen, Shari; Meighan, Sean
Cc: Schoenebeck, Greg; RST01 Hoc
Subject: FW: Communiction Letter
Importance: High

Good Morning,

Please see the communication below from the NRC Emergency Response Team that needs to be delivered to the NRC employees via an inter office announcement. Please feel free to make any changes necessary to the content.

Members of the NRC Emergency Response Teams have created a SharePoint Site, a centralized location for useful information that has been useful during Agency's response effort for the events transpiring at the Fukushima Daiichi reactor facility. Located you will find useful information including priorities/current tasks which the Emergency Operations Center (EOC) is working on, important documents (e.g., spent fuel pool response initiatives, response press releases, status reports, etc.)

Members of the team will continual to populate the site with information as it comes in.

http://portal.nrc.gov/edo/nrr/Japan_Fukushima/default.aspx

Thank you,
Gayathri Sastry
301-415-8344
(b)(6)

From: RST01 Hoc
Sent: Thursday, March 17, 2011 5:55 PM
To: Sastry, Gayathri
Subject: RE: Communiction Letter

Hi Gayathri,

This is what I have. Hopefully, this hits the mark. Thanks.

Members of the NRC Emergency Response Teams have created a Sharepoint Site keep a centralized location for useful information that has been useful during Agency's response effort for the events transpiring at the Fukushima Daiichi reactor facility. Located you will find useful information including priorities/current tasks which the Emergency Operations Center (EOC) is working on, important documents (e.g., spent fuel pool response initiatives, response press releases, status reports, etc.)

Members of the team will continual to populate the site with information as it comes in.

From: Sastry, Gayathri
Sent: Thursday, March 17, 2011 5:37 PM
To: RST01 Hoc
Cc: Schoenebeck, Greg
Subject: Communiction Letter
Importance: High

Greg,

We need you to provide us with the content for the new letter/ communication that needs to go out to NRC. Please send it to me as soon as possible. I will have to forward the content to Eric Leeds for his approval.

Thank you,
Gayathri Sastry
301-415-8344
(b)(6)

From: RST01 Hoc
Sent: Thursday, March 17, 2011 5:17 PM
To: Sastry, Gayathri
Subject: RE: Information

Freakin' Awesome... Thanks.

From: Sastry, Gayathri
Sent: Thursday, March 17, 2011 5:16 PM
To: RST01 Hoc
Cc: Schoenebeck, Greg
Subject: RE: Information

Site has been created and as it stands you and Rollie Berry have full access. Please take a look at the site and give us your feed back.

http://portal.nrc.gov/edo/nrr/Japan_Fukushima/default.aspx

Thank you,
Gayathri Sastry
301-415-8344
(b)(6)

From: RST01 Hoc
Sent: Thursday, March 17, 2011 4:45 PM
To: Sastry, Gayathri
Subject: Information

Gayathri,

Info comes in here fast and furious. A lot of it is potential solutions to the various problems at the site. I'd like a folder that can be a bin for these proposals. I'll be forwarding these e-mails on to you for the ones that look important. Thanks so much.

Greg

PS-

Rolle Berry will be a good contact for Sharepoint access admin rights too.

Nelson, Robert

From: Nelson, Robert
Sent: Friday, March 18, 2011 1:10 PM
To: Nguyen, Quynh
Subject: RE: FYI - ANOTHER Japan Sharepoint???? --- Communiction Letter

Note that their Qs & As for Ops Response folder is empty except for the seismic paper

NELSON

-----Original Message-----
From: Nguyen, Quynh
Sent: Friday, March 18, 2011 11:41 AM
To: Schoenebeck, Greg; Sastry, Gayathri
Cc: Nelson, Robert; Thomas, Eric; Meighan, Sean
Subject: FYI - ANOTHER Japan Sharepoint???? --- Communiction Letter

OK... thanks for access.

http://portal.nrc.gov/edo/nrr/NRR%20TA/FAQ%20Related%20to%20Events%20Occuring%20in%20Japan/Forms/AllItems.aspx

Here's where Sean and I have been depositing things...

I'll keep an eye out for info on your site...

It's easier for me to explain over the phone when you get a chance 301-415-5844

-----Original Message-----
From: Schoenebeck, Greg
Sent: Friday, March 18, 2011 11:34 AM
To: Nguyen, Quynh; Sastry, Gayathri
Cc: Nelson, Robert; Thomas, Eric; Meighan, Sean
Subject: RE: FYI - ANOTHER Japan Sharepoint???? --- Communiction Letter

Sounds good Quynh. We were unaware over on this end. It's just we've been getting slammed with sitreps and other info that may be useful resources for our counterparts in NRR to keep abreast of and provide knowledge to the table if necessary.

If this is already being done, or does not align with Agency policy, then let's not overstep bounds.

Just trying to keep a good place holder for the amount of info coming in here is fast and furious.

Greg

From: Nguyen, Quynh
Sent: Friday, March 18, 2011 9:57 AM
To: Schoenebeck, Greg; Sastry, Gayathri
Cc: Nelson, Robert; Thomas, Eric; Meighan, Sean
Subject: FYI - ANOTHER Japan Sharepoint???? --- Communiction Letter

000/364

Greg and Gayathri,

Leeds has assigned Nelson as the NRR Lead for Q&As. We need to understand what is in the site, who it is for, etc...

1 – Not to redouble efforts.
2 – To prevent inadvertent release of information that may undermine Agency efforts and alignment of messages by the Chairman.

Thanks,
Quynh

From: Cohen, Shari
Sent: Friday, March 18, 2011 9:48 AM
To: Nguyen, Quynh
Subject: FW: Communiction Letter
Importance: High

Wanted you kept in the loop on this Q.

Shari Cohen, Contract Secretary
Office of Nuclear Reactor Regulation, USNRC Room – O-13H18 / Mail Stop - O13H16M Phone – 301-415-1270 Fax - 301 - 415-8333 Email - shari.cohen@nrc.gov<mailto:shari.cohen@nrc.gov>

From: Sastry, Gayathri
Sent: Friday, March 18, 2011 9:41 AM
To: Steger (Tucci), Christine; Cohen, Shari; Meighan, Sean
Cc: Schoenebeck, Greg; RST01 Hoc
Subject: FW: Communiction Letter
Importance: High

Good Morning,

Please see the communication below from the NRC Emergency Response Team that needs to be delivered to the NRC employees via an inter office announcement. Please feel free to make any changes necessary to the content.

Members of the NRC Emergency Response Teams have created a SharePoint Site, a centralized location for useful information that has been useful during Agency's response effort for the events transpiring at the Fukushima Daiichi reactor facility. Located you will find useful information including priorities/current tasks which the Emergency Operations Center (EOC) is working on, important documents (e.g., spent fuel pool response initiatives, response press releases, status reports, etc.)

Members of the team will continual to populate the site with information as it comes in.

http://portal.nrc.gov/edo/nrr/Japan_Fukushima/default.aspx

Thank you,
Gayathri Sastry
301-415-8344
(b)(6)

From: RST01 Hoc
Sent: Thursday, March 17, 2011 5:55 PM

To: Sastry, Gayathri
Subject: RE: Communiction Letter

Hi Gayathri,

This is what I have. Hopefully, this hits the mark. Thanks.

Members of the NRC Emergency Response Teams have created a Sharepoint Site keep a centralized location for useful information that has been useful during Agency's response effort for the events transpiring at the Fukushima Daiichi reactor facility. Located you will find useful information including priorities/current tasks which the Emergency Operations Center (EOC) is working on, important documents (e.g., spent fuel pool response initiatives, response press releases, status reports, etc.)

Members of the team will continual to populate the site with information as it comes in.

From: Sastry, Gayathri
Sent: Thursday, March 17, 2011 5:37 PM
To: RST01 Hoc
Cc: Schoenebeck, Greg
Subject: Communiction Letter
Importance: High

Greg,

We need you to provide us with the content for the new letter/ communication that needs to go out to NRC. Please send it to me as soon as possible. I will have to forward the content to Eric Leeds for his approval.

Thank you,
Gayathri Sastry
301-415-8344
(b)(6)

From: RST01 Hoc
Sent: Thursday, March 17, 2011 5:17 PM
To: Sastry, Gayathri
Subject: RE: Information

Freakin' Awesome... Thanks.

From: Sastry, Gayathr
Sent: Thursday, March 17, 2011 5:16 PM
To: RST01 Hoc
Cc: Schoenebeck, Greg
Subject: RE: Information

Site has been created and as it stands you and Rollie Berry have full access. Please take a look at the site and give us your feed back.

http://portal.nrc.gov/edo/nrr/Japan_Fukushima/default.aspx

Thank you,
Gayathri Sastry
301-415-8344
(b)(6)

From: RST01 Hoc
Sent: Thursday, March 17, 2011 4:45 PM
To: Sastry, Gayathri
Subject: Information

Gayathri,

Info comes in here fast and furious. A lot of it is potential solutions to the various problems at the site. I'd like a folder that can be a bin for these proposals. I'll be forwarding these e-mails on to you for the ones that look important. Thanks so much.

Greg

PS-

Rolle Berry will be a good contact for Sharepoint access admin rights too.

From: Evans, Michele
Sent: Saturday, March 19, 2011 7:41 PM
To: LIA03 Hoc
Subject: Re: Traveler checklist

No. I did not send the traveler sheet to the travelers. All I did was tell them they were going and that the LTeam would be in touch with them to handle all logistics. I am not contacting them any more. The Liaison team needs to do everything else.

If there is a question, you can call me at (b)(6)

Michele

Sent from an NRC Blackberry
Michele Evans

From: LIA03 Hoc
To: Evans, Michele
Sent: Sat Mar 19 19:18:38 2011
Subject: Traveler checklist

Michele,
I think I saw that you sent out the traveler checklist to the next wave of travelers? One of the topics on there should be about getting their dosimetry (some may already have it), the travelers must meet with an RSO for a brief before receiving it and they must have the Site Access training class documented. The dosimetry units are at the LIA03 desk in the Op. Center. I'm not sure if you're sending them another communication or not (I don't want to do things that you've already done).

Thanks!
-Jenny

0001365

From: Coyne, Kevin
To: Coe, Doug
Cc: Correia, Richard; Stutzke, Martin; Siu, Nathan
Subject: Fw: TASKING FROM BRIAN SHERON
Date: Saturday, March 19, 2011 11:54:48 AM

Doug-

See below from Mike Scott - I think we need to make sure we have clear alignment with dsa before RES starts this task or we may find ourselves going down a SOARCA-like consequence assessment process and be unable to really speak to "risk". As you know, assessing sfp risk is far going to be more complex than calculating time to boil and or amount of fuel damage in the spent fuel pool for various fuel loading configurations (though this would certainly be a big piece of it...). We need to systemmatically assess the probability of loss of spent fuel pool cooling (including human recovery actions) in addition to a human error contribution to the overall mix. Just thinking out load, moving a significant amount of fuel into dry casks may increase the liklihood of misloads, drops, and crane accidents. We've already had some experience with premature cask loading (eg, Palisades had some challenges in this area). Susan Cooper could obviously provide a great perspective with her human error work on fuel handling. Anyway, I think we should let the systemmatic pra point to the best options for minimizing sfp risk (this was one of the objectives of the level 3 pra) rather than assuming dry cask storage is the only solution path. And it should go without saying that we need to understand the baseline risk in today's spent fuel pools before we can even start talking about potential benefits. We have already done some work in this area (eg nureg-1864;pra for dry cask storage; nureg-6865, seismic behavior of fuel casks;nureg/cr-6441, spent fuel heatup following loss of water; nureg-1726, spent fuel heat up; the list goes on...) - we'd obviously want to get a good handle on what we've already done and it's usefullness before plunging too far ahead. However, none of this will be incomplete without knowing the more of what happened in japan - we had thought running a fire hose to the sfp was a relatively straightforward action (if not nuanced depending on the plant state) - clearly more can be going on than meets the eye.

Anyway, I think it is important that this question be cast as a PRA problem rather than a thermal hydraulic, zirc fire consequence assessment problem - assuming Brian really wants to talk about risk. Perhaps an initial alignment among the principles once we get through the incident response/media/commission frenzy of the next few days).

Kevin

Sent from an NRC Blackberry
Kevin Coyne
(b)(6)

From: Scott, Michael
To: Gibson, Kathy; Santiago, Patricia; Lee, Richard; Zigh, Ghani; Coyne, Kevin
Sent: Sat Mar 19 09:16:13 2011
Subject: TASKING FROM BRIAN SHERON

Brian advised me yesterday that he would like us to evaluate the risk benefit of pulling spent fuel out of the SFP as soon as the specific assembly heat load permits. The risk reduction could be in terms of time to boiling (I believe that would be small, since by definition fuel old enough to be put in dry storage would not contribute all that much to pool heatup), and with reduced source term in the SFP. He may have already spoken to Ghani about this. He does not want this work to interfere with crisis work, but does want the evaluation done.

000/364

Mike

Weaver, Tonna

From: Kammerer, Annie
Sent: Saturday, March 19, 2011 8:33 AM
To: Nelson, Robert
Cc: Roberts, Darrell; Croteau, Rick; Kennedy, Kriss; Lara, Julio; West, Steven; Shear, Gary; Ruland, William; Boger, Bruce; Meighan, Sean; Nguyen, Quynh; Giitter, Joseph; Burnell, Scott; Brenner, Eliot; Case, Michael; Munson, Clifford; Ake, Jon; Hogan, Rosemary
Subject: RE: Action: Seismic Q&As
Attachments: Frequently asked questions related to the March 11 2011 Earthquake and Tsunami 3-19-2011.docx

OK. Here is the proposed set of public Q&As for publication next week. I think it's pretty good, at least it's the best I can do. Jennifer Uhle did a pretty thorough review for me.

I didn't end up including the plant specific questions because it was too awkward. We could theoretically do a separate add on.

Annie

From: Nelson, Robert
Sent: Thursday, March 17, 2011 2:18 PM
To: Kammerer, Annie
Cc: Roberts, Darrell; Croteau, Rick; Kennedy, Kriss; Lara, Julio; West, Steven; Shear, Gary; Ruland, William; Boger, Bruce; Meighan, Sean; Nguyen, Quynh; Giitter, Joseph
Subject: Action: Seismic Q&As
Importance: High

Annie:

The regions have a critical need for publicly releasable seismic info (Qs & As) to support public meetings beginning next week. We need a releasable version of your document. Can you assemble the info that you have prepared that you believe is good to go. We can then get that reviewed by OPA. Need your input tomorrow.

R. A. Nelson

Robert A. Nelson
Deputy Director
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation
U.S.NRC
United States Nuclear Regulatory Commission
Protecting People and the Environment
E-mail: robert.nelson@nrc.gov | Office: (301) 415-1453 | Cell (b)(6) | Fax: (301) 415-2102|

From: Kammerer, Annie
Sent: Thursday, March 17, 2011 2:36 AM
To: Kammerer, Annie; Hiland, Patrick; Skeen, David; Case, Michael; RST01 Hoc
Cc: Howe, Allen; Nelson, Robert; Stutzke, Martin; Giitter, Joseph; Rihm, Roger; McDermott, Brian; Hasselberg, Rick; Chokshi, Nilesh; Munson, Clifford; Cook, Christopher; Flanders, Scott; Ross-Lee, MaryJane; Brown, Frederick; Giitter, Joseph; Howe, Allen; Ruland, William; Dudes, Laura; Karas, Rebecca; Ake, Jon; Munson, Clifford; Hogan, Rosemary; Uhle, Jennifer; Marshall, Michael; Uselding, Lara; Randall, John; Allen, Don; Burnell, Scott; Hayden, Elizabeth; Pires, Jose; Graves, Herman; Candra, Hernando; Murphy, Andrew; Murphy, Andrew; Pires, Jose; Hogan, Rosemary; Sheron, Brian;

Dricks, Victor; Warnick, Greg; Reynoso, John; Lantz, Ryan; Markley, Michael; Orders, William; Santiago, Patricia; Snodderly, Michael; Baggett, Steven; Sosa, Belkys; Davis, Roger; Franovich, Mike; Castleman, Patrick; Sharkey, Jeffry; Boska, John; Ma, John; Tegeler, Bret; Patel, Pravin; Shams, Mohamed; Morris, Scott; Brenner, Eliot; Harrington, Holly; Seber, Dogan; Ledford, Joey; Johnson, Michael; Virgilio, Martin; Holahan, Vincent; Bergman, Thomas
Subject: Seismic Q&As March 17th 2am update

All,

As promised, a sharepoint site has been set up where our friends in NRR will be posting the latest version of the Seismic Q&A document on an ongoing basis. If someone would prefer to use the sharepoint site, instead of being on this distribution list, please let me know...
http://portal.nrc.gov/edo/nrr/NRR%20TA/FAQ%20Related%20to%20Events%20Occuring%20in%20Japan/Forms/AllItems.aspx

This latest update has a number of new questions (not many with answers today, but we are working hard). A high priority question we are working on is "how many plants are near a mapped active fault". We're focusing on anything within 50 miles. We're also pulling relevant questions from the congressional inquiries we just received; and will also give these high priority to support any needs by NRR.

Many new figures and some draft fact sheets have added to the "additional information" section. These include the NRO half of a tsunami fact sheet...a description of the tsunami research is still to come from RES.

Some good news: Yesterday's version seems to have been widely forwarded around the agency. So, we are also starting to get some excellent questions from staff looking forward. This is allowing us to feel that we are finally getting out in front of things to a small degree. Also, our team has grown and we now have someone acting as source of seismic expertise for the 11pm to 7 am shift. This means that we now have seismic experts available to the RST and OPA at the Op Center 24 hours, with 2 people during the day. That extra support is allowing us to get this out at least an hour earlier today ☺

We are continuing to compile the questions that come in and update the seismic Q&A document. If you have suggested changes, or want to provide missing answers, please forward them to me for compilation.

This is a living document and will be updated daily in the foreseeable future.

Happy St. Paddy's Day. May the world (especially our friends in Japan) have the luck of the Irish today.

Cheers,
Annie

Dr. Annie Kammerer, PE
Senior Seismologist and Earthquake Engineer
US Nuclear Regulatory Commission
Office of Nuclear Regulatory Research
Washington DC 20555
(b)(6) mobile
BB

From: Kammerer, Annie
Sent: Tuesday, March 15, 2011 3:41 AM
To: Hiland, Patrick; Skeen, David
Cc: Howe, Allen; Nelson, Robert; Stutzke, Martin; Giitter, Joseph; Rihm, Roger; McDermott, Brian; Hasselberg, Rick; Kammerer, Annie; Chokshi, Nilesh; Munson, Clifford; Cook, Christopher; Flanders, Scott; Ross-Lee, MaryJane; Brown, Frederick; Giitter, Joseph; Howe, Allen; Case, Michael; Ruland, William; Dudes, Laura; Karas, Rebecca; Ake, Jon; Munson, Clifford; Hogan, Rosemary; Uhle, Jennifer; Marshall, Michael; Uselding, Lara; Randall, John; Allen, Don; Burnell, Scott;

Hayden, Elizabeth; Pires, Jose; Graves, Herman; Candra, Hernando; Murphy, Andrew; Murphy, Andrew; Pires, Jose; Hogan, Rosemary; Sheron, Brian; Dricks, Victor; Warnick, Greg; Reynoso, John; Lantz, Ryan; Markley, Michael
Subject: latest version of Q&As

All,

This is the first draft of the seismic-specific Q&As. It is pretty rough and there are many answers still missing, but people have contributed a lot and we thought it may be useful for many people trying to answer questions coming in.

We are continuing to compile the questions that come in and update the seismic Q&A document. If you have suggested changes, or want to provide missing answers, please forward them to me for compilation.

This is a living document and will be updated daily in the foreseeable future.

Annie

Dr. Annie Kammerer, PE
Senior Seismologist and Earthquake Engineer
US Nuclear Regulatory Commission
Office of Nuclear Regulatory Research
Washington DC 20555
(b)(6) [redacted] mobile
[redacted] BB

NRC frequently asked questions related to the March 11, 2011 Japanese Earthquake and Tsunami

3-19-11 Version

Compiled by Annie Kammerer, Jon Ake, and Cliff Munson for submission to OPA and NRR. We would appreciate getting an edited word file back to assure that the public comments and the internal document are consistent.

List of Questions

1) Can an earthquake and tsunami as large as happened in Japan also happen here?

This earthquake occurred on a "subduction zone", which is the type of tectonic region that produces earthquakes of the largest magnitude. A subduction zone is a tectonic plate boundary where one tectonic plate is pushed under another plate. Subduction zone earthquakes are also required to produce the kind of massive tsunami seen in Japan. In the continental US, the only subduction zone is the Cascadia subduction zone which lies off the coast of northern California, Oregon and Washington. So, a continental earthquake and tsunami as large as in Japan could only happen there. The only nuclear plant near the Cascadia subduction zone is the Columbia Generating Station. This plant is located a large distance from the coast (approximately 225 miles) and the subduction zone (approximately 300 miles), so the ground motions estimated at the plant are far lower than those seen at the Fukushima plants. This distance also precludes the possibility of a tsunami affecting the plant. Outside of the Cascadia subduction zone, earthquakes are not expected to exceed a magnitude of approximatly 8. Magnitude is measured on a log scale and so a magnitude 9 earthquake is ten times larger than a magnitude 8 earthquake.

2) Did the Japanese underestimate the size of the maximum credible earthquake and tsunami that could affect the plants?

The magnitude of the earthquake was somewhat greater than was expected for that part of the subduction zone. However, the Japanese nuclear plants were recently reassessed using ground motion levels similar to those that are believed to have occurred at the sites. The ground motions against which the Japanese nuclear plants were reviewed were expected to result from earthquakes that were smaller, but were much closer to the sites. The NRC does not currently have information on the maximum tsunami height that was expected at the sites.

3) How high was the tsunami at the Fukushima nuclear plants?

The tsunami modeling team at the National Oceanic and Atmospheric Administration's Pacific Marine Environmental Lab have estimated the wave height just offshore to be approximately 8 meters in height at Fukushima Daiichi and approximately 7 meters in Fukushima Daini. This is based on recordings from NOAA's Deep-ocean Assessment and Reporting of Tsunamis (DART) buoys and a high resolution numerical model developed for the tsunami warning system. If plant recordings exist they were not yet provided to the NRC.

4) Was the damage to the Japanese nuclear plants mostly from the earthquake or the tsunami?

Because this event happened in Japan, it is hard for NRC staff to make the assessment necessary to understand exactly what happened at this time. In the nuclear plants there may have been some damage from the shaking, and the earthquake caused the loss of offsite power. However, the tsunami appears to have played a key role in the loss of other power sources at the site producing station blackout, which is a critical factor in the ongoing problems.

5) Have any lessons for US nuclear plants been identified?

The NRC is in the process of following and reviewing the event in real time. This will undoubtedly lead to the identification of issues that warrant further study. However, a complete understanding of lessons learned will require more information than is currently available to NRC staff.

6) Was there any damage to US reactors from either the earthquake or the resulting tsunami?

No.

7) How many US reactors are located in active earthquake zones?

Although we often think of the US as having "active" and "non-active" earthquake zones, earthquakes can actually happen almost anywhere. Seismologists typically separate the US into low, moderate, and high seismicity zones. The NRC requires that every nuclear plant be designed for site-specific ground motions that are appropriate for their locations. In addition, the NRC has specified a minimum ground motion level to which nuclear plants must be designed.

8) What level of earthquake hazard are the US reactors designed for?

Each reactor is designed for a different ground motion that is determined on a site-specific basis. The existing nuclear plants were designed on a "deterministic" or "scenario earthquake" basis that accounted for the largest earthquakes expected in the area around the plant, without consideration of the likelihood of the earthquakes considered. New reactors are designed using probabilistic techniques that characterize both the ground motion levels and uncertainty at the proposed site. These probabilistic techniques account for the ground motions that may result from all potential seismic sources in the region around the site. Technically speaking, this is the ground motion with an annual frequency of occurrence of $1x10^{-4}$/year, but this can be thought of as the ground motion that occurs every 10,000 years on average. One important aspect is that probabilistic hazard and risk-assessment techniques account for beyond-design basis events. NRC's Generic Issue 199 (GI-199) project is using the latest probabilistic techniques used for new nuclear plants to review the safety of the existing plants. [see questions 16 to 21 for more information about GI-199]

9) What magnitude earthquake are currently operating US nuclear plants designed to?

Ground motion is a function of both the magnitude of an earthquake and the distance from the fault to the site. Nuclear plants, and in fact all engineered structures, are actually designed based on ground motion levels, not earthquake magnitudes. The existing nuclear plants were designed based on a "deterministic" or "scenario earthquake" basis that accounted for the largest earthquakes expected in the area around the plant. A margin is further added to the predicted ground motions to provide added robustness.

10) Have events in Japan changed our perception of earthquake risk to the nuclear plants in the US?

The NRC continues to determine that US nuclear plants are safe. This does not change the NRC's perception of earthquake hazard (i.e., ground motion levels) at US nuclear plants. It is too early to tell what the lessons from this earthquake are. The NRC will look closely at all aspects of response of the plants to the earthquake and tsunami to determine if any actions need to be taken in US nuclear plants and if any changes are necessary to NRC regulations.

11) Can significant damage to a nuclear plant like we see in Japan happen in the US due to an earthquake? Are the Japanese nuclear plants similar to US nuclear plants?

All US nuclear plants are built to withstand environmental hazards, including earthquakes and tsunamis. Even those nuclear plants that are located within areas with low and moderate seismic activity are designed for safety in the event of such a natural disaster. The NRC requires that safety-significant structures, systems, and components be designed to take into account even rare and extreme seismic

and tsunami events. In addition to the design of the plants, significant effort goes into emergency response planning and accident management. This approach is called defense-in-depth.

The Japanese facilities are similar in design to some US facilities. However, the NRC has required modifications to the plants since they were built, including design changes to control hydrogen and pressure in the containment. The NRC has also required plants to have additional equipment and measures to mitigate damage stemming from large fires and explosions from a beyond-design-basis event. The measures include providing core and spent fuel pool cooling and an additional means to power other equipment on site.

12) What is the likelihood of the design basis or "SSE" ground motions being exceeded over the life of a nuclear plant?

The ground motions that are used as seismic design bases at US nuclear plants are called the Safe Shutdown Earthquake ground motion (SSE). In the mid to late 1990s, the NRC staff reviewed the potential for ground motions beyond the design basis as part of the Individual Plant Examination of External Events (IPEEE). From this review, the staff determined that seismic designs of operating nuclear plants in the US have adequate safety margins for withstanding earthquakes. Currently, the NRC is in the process of conducting GI-199 to again assess the resistance of US nuclear plants to earthquakes. Based on NRC's analyses to date, the probability of ground motions exceeding the SSE for the plants in the Central and Eastern United States is less than 2%, with values ranging from a low of 0.1% to a high of 6%.

It is important to remember that structures, systems and components are required to have "adequate margin," meaning that they must continue be able withstand shaking levels that are above the plant's design basis.

13) Which reactors are along coastal areas that could be affected by a tsunami?

Many nuclear plants are located in coastal areas that could potentially be affected by a tsunami. Two nuclear plants, Diablo Canyon and San Onofre, are on the Pacific Coast, which is known to have a tsunami hazard. Two nuclear plants on the Gulf Coast, South Texas and Crystal River, could also be affected by tsunami. There are many nuclear plants on the Atlantic Coast or on rivers that may be affected by a tidal bore resulting from a tsunami. These include St. Lucie, Turkey Point, Brunswick, Oyster Creek, Millstone, Pilgrim, Seabrook, Calvert Cliffs, Salem/Hope Creek, and Surry. Tsunami on the Gulf and Atlantic Coasts occur, but are very rare. Generally the flooding anticipated from hurricane storm surge exceeds the flooding expected from a tsunami for nuclear plants on the Atlantic and Gulf Coast. Regardless, all nuclear plants are designed to withstand a tsunami.

14) What is magnitude anyway? What is the Richter Scale? What is intensity?

An earthquake's magnitude is a measure of the strength of the earthquake as determined from seismographic observations. Magnitude is essentially an objective, quantitative measure of the size of an earthquake. The magnitude can be expressed in various ways based on seismographic records (e.g., Richter Local Magnitude, Surface Wave Magnitude, Body Wave Magnitude, and Moment Magnitude). Currently, the most commonly used magnitude measurement is the Moment Magnitude, Mw, which is based on the strength of the rock that ruptured, the area of the fault that ruptured, and the average amount of slip. Moment magnitude is, therefore, a direct measure of the energy released during an earthquake. Because of the logarithmic basis of the scale, each whole number increase in magnitude represents a tenfold increase in measured amplitude; as an estimate of energy, each whole number step

in the magnitude scale corresponds to the release of about 31 times more energy than the amount associated with the preceding whole number value.

The Richter magnitude scale was developed in 1935 by Charles F. Richter of the California Institute of Technology and was based on the behavior of a specific seismograph that was manufactured at that time. The instruments are no longer in use and the magnitude scale is, therefore, no longer used in the technical community. However, the Richter Scale is a term that is so commonly used by the public that scientists generally just answer questions about "Richter" magnitude by substituting moment magnitude without correcting the misunderstanding.

The intensity of an earthquake is a qualitative assessment of effects of the earthquake at a particular location. The intensity assigned is based on observed effects on humans, on human-built structures, and on the earth's surface at a particular location. The most commonly used scale in the US is the Modified Mercalli Intensity (MMI) scale, which has values ranging from I to XII in the order of severity. MMI of I indicates an earthquake that was not felt except by a very few, whereas MMI of XII indicates total damage of all works of construction, either partially or completely. While an earthquake has only one magnitude, intensity depends on the effects at each particular location.

15) How do magnitude and ground motion relate to each other?

The ground motion experienced at a particular location is a function of the magnitude of the earthquake, the distance from the fault to the location of interest, and other elements such as the geologic materials through which the waves pass.

16) What is Generic Issue 199 about?

GI-199 investigates the safety and risk implications of updated earthquake-related data and models. These data and models suggest that the probability for earthquake ground motion above the seismic design basis for some nuclear plants in the Central and Eastern United States, although is still low, is larger than previous estimates.

17) Does GI-199 provide rankings of US nuclear plants in terms of safety?

The NRC does not rank nuclear plants by seismic risk. The objective of the GI-199 Safety/Risk Assessment was to perform a conservative, screening-level assessment to evaluate if further investigations of seismic safety for operating reactors in the central and eastern US (CEUS) are warranted, consistent with NRC directives. The results of the GI-199 safety risk assessment should not be interpreted as definitive estimates of plant-specific seismic risk because some analyses were very conservative making the calculated risk higher than in reality. The nature of the information used (both seismic hazard data and plant-level fragility information) make these estimates useful only as a screening tool.

18) What are the current findings of GI-199?

Currently operating nuclear plants in the US remain safe, with no need for immediate action. This determination is based on NRC staff reviews of updated seismic hazard information and the conclusions of the first stage of GI-199. Existing nuclear plants were designed with considerable margin to be able to withstand the ground motions from the "deterministic" or "scenario earthquake" that accounted for the largest earthquakes expected in the area around the plant. The results of the GI-199 assessment demonstrate that the probability of exceeding the design basis ground motion may have increased at some sites, but only by a relatively small amount. In addition, the probabilities of seismic core damage are lower than the guidelines for taking immediate action. Although there is not an immediate safety

concern, the NRC is focused on assuring safety during even very rare and extreme events. Therefore, the NRC has determined that assessment of updated seismic hazards and plant performance should continue.

19) What do you mean by "increased estimates of seismic hazards" at nuclear plant sites?

Seismic hazard (earthquake hazard) represents the chance (or probability) that a specific level of ground motion could be observed or exceeded at a given location. Our estimates of seismic hazard at some Central and Eastern United States locations have changed based on results from recent research, indicating that earthquakes occurred more often in some locations than previously estimated. Our estimates of seismic hazard have also changed because the models used to predict the level of ground motion, as caused by a specific magnitude earthquake at a certain distance from a site, changed. The increased estimates of seismic hazard at some locations in the Central and Eastern United States were discussed in a memorandum to the Commission, dated July 26, 2006. (The memorandum is available in the NRC Agencywide Documents Access and Management System [ADAMS] under Accession No. ML052360044).

20) Does the Seismic Core Damage represent a measurement of the risk of radiation release or only the risk of core damage (not accounting for additional containment)?

Seismic core damage frequency is the probability of damage to the core resulting from a seismic initiating event. It does not imply either a meltdown or the loss of containment, which would be required for radiological release to occur. The likelihood of radiation release is far lower.

21) Where can I get current information about Generic Issue 199?

The public NRC Generic Issues Program (GIP) website (http://www.nrc.gov/about-nrc/regulatory/gen-issues.html) contains program information and documents, background and historical information, generic issue status information, and links to related programs. The latest Generic Issue Management Control System quarterly report, which has regularly updated GI-199 information, is publicly available at http://www.nrc.gov/reading-rm/doc-collections/generic-issues/quarterly/index.html. Additionally, the US Geological Survey provides data and results that are publicly available at http://earthquake.usgs.gov/hazards/products/conterminous/2008/.

22) Could an accident sequence like the one at Japan's Fukushima Daiichi nuclear plants happen in the US?

It is difficult to answer this question until we have a better understanding of the precise problems and conditions that faced the operators at Fukushima Daiichi. We do know, however, that Fukushima Daiichi Units 1-3 lost all offsite power and emergency diesel generators. This situation is called "station blackout." US nuclear power plants are designed to cope with a station blackout event that involves a loss of offsite power and onsite emergency power. The Nuclear Regulatory Commission's detailed regulations address this scenario. US nuclear plants are required to conduct a "coping" assessment and develop a strategy to demonstrate to the NRC that they could maintain the plant in a safe condition during a station blackout scenario. These assessments, proposed modifications to the plant, and operating procedures were reviewed and approved by the NRC. Several plants added additional AC power sources to comply with this regulation.

In addition, US nuclear plant designs and operating practices since the terrorist events of September 11, 2001, are designed to mitigate severe accident scenarios such as aircraft impact, which include the complete loss of offsite power and all on-site emergency power sources.

US nuclear plant designs include consideration of seismic events and tsunamis'. It is important not to extrapolate earthquake and tsunami data from one location of the world to another when evaluating these natural hazards. These catastrophic natural events are very region- and location-specific, based on tectonic and geological fault line locations.

Božin, Sunny

From: Ostendorff, William
Sent: Saturday, March 19, 2011 11:41 AM
To: Nieh, Ho
Subject: Re: Phone call

Thanks Ho-more to follow!

----- Original Message -----
From: Nieh, Ho
To: Ostendorff, William
Sent: Sat Mar 19 11:10:26 2011
Subject: Re: Phone call

Sir - received your message. The task forces sound like good news. Hope things continue on a good path for NRC moving forward. I think you've had a positive influence. Will standby for further info to process.

Just got back from a bike ride - wore my helmet too!

Enjoy the nice weather.

Ho

Sent via BlackBerry

Ho Nieh
Chief of Staff
Office of Commissioner William C. Ostendorff U.S. Nuclear Regulatory Commission
(301) 415-1811 (office)
(b)(6)
(301) 415-1757 (fax)
ho.nieh@nrc.gov

----- Original Message -----
From: Ostendorff, William
To: Nieh, Ho
Sent: Sat Mar 19 10:05:15 2011
Subject: Re: Phone call

Had a good phone call with GBJ. Very positive.

----- Original Message -----
From: Nieh, Ho
To: Ostendorff, William
Sent: Sat Mar 19 08:29:19 2011
Subject: Re: Phone call

Thanks Sir. Let me know if you need any follow up.

Ho

Sent via BlackBerry

000368

Ho Nieh
Chief of Staff
Office of Commissioner William C. Ostendorff U.S. Nuclear Regulatory Commission
(301) 415-1811 (office)
(b)(6)
(301) 415-1757 (fax)
ho.nieh@nrc.gov

----- Original Message -----
From: Ostendorff, William
To: Nieh, Ho
Sent: Sat Mar 19 08:23:40 2011
Subject: Fw: Phone call

Fyi

----- Original Message -----
From: Ostendorff, William
To: Jaczko, Gregory
Cc: Batkin, Joshua
Sent: Sat Mar 19 07:59:26 2011
Subject: Phone call

Greg- I received a phone call from a senior Naval Reactors official this morning concerning NRC program and logistics management moving forward to provide US industry support in Japan. If you have a few moments this morning, and I know you are swamped, would recommend we talk on the phone. Bill

Bozin, Sunny

From: Ostendorff, William
Sent: Saturday, March 19, 2011 8:30 AM
To: Nieh, Ho
Subject: Re: Phone call

Will do

----- Original Message -----
From: Nieh, Ho
To: Ostendorff, William
Sent: Sat Mar 19 08:29:19 2011
Subject: Re: Phone call

Thanks Sir. Let me know if you need any follow up.

Ho

Sent via BlackBerry

Ho Nieh
Chief of Staff
Office of Commissioner William C. Ostendorff U.S. Nuclear Regulatory Commission
(301) 415-1811 (office)
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Subject: Fw: Phone call

Fyi

----- Original Message -----
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To: Jaczko, Gregory
Cc: Batkin, Joshua
Sent: Sat Mar 19 07:59:26 2011
Subject: Phone call

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From: Leistikow, Dan
To: McIntyre, David; "Gilfillan.Brendan@epamail.epa.gov"
Cc: "Andy.Adora@epamail.epa.gov"
Subject: Re: Protective Action Guidelines
Date: Sunday, March 20, 2011 6:20:59 PM

As Patrick Swayze would say, ditto.

----- Original Message -----
From: McIntyre, David <David.McIntyre@nrc.gov>
To: 'Gilfillan.Brendan@epamail.epa.gov' <Gilfillan.Brendan@epamail.epa.gov>; Leistikow, Dan
Cc: 'Andy.Adora@epamail.epa.gov' <Andy.Adora@epamail.epa.gov>
Sent: Sun Mar 20 17:45:04 2011
Subject: Re: Protective Action Guidelines

That's my understanding.

David McIntyre
NRC Office of Public Affairs
(b)(6)
301-415-8200 (office)
Sent from my BlackBerry, which is wholly respnsble for all typoos.

----- Original Message -----
From: Gilfillan.Brendan@epamail.epa.gov <Gilfillan.Brendan@epamail.epa.gov>
To: Dan.leistikow@hq.doe.gov <Dan.leistikow@hq.doe.gov>; McIntyre, David
Cc: Andy.Adora@epamail.epa.gov <Andy.Adora@epamail.epa.gov>
Sent: Sun Mar 20 17:08:55 2011
Subject: Protective Action Guidelines

Hey -

We're getting questions about what radiation levels would cause us some concern, or even lead us to take action. Our technical folks are telling us that in emergencies, EPA, NRC and DOE all use the published EPA Protective Action Guides in making recommendations back to State public health and environmental officials.

Just want to make sure that's your understanding as well, so that there's no confusion and to ensure we're not putting different numbers/guidance out there.

- Brendan

From:	McIntyre, David
To:	stevek@newenergytimes.com
Bcc:	Janbergs, Holly; Brenner, Eliot
Subject:	RE: Media Inquiry
Date:	Sunday, March 20, 2011 2:00:00 PM

Mr. Krivit –

The EPA is the lead US agency conducting monitoring. EPA issued a statement midweek I believe, saying that they were deploying additional monitors in the western US and that the data on their RadNet system would be available to the public over the EPA's website. Later in the week, DOE was designated the lead agency in responding to questions about the domestic monitoring effort. Questions about this effort should be directed to DOE at 202 586 4940.

Regards,
David McIntyre
NRC Public Affairs

From: Steve Krivit [mailto:stevek@newenergytimes.com]
Sent: Sunday, March 20, 2011 2:13 PM
To: OPA Resource
Subject: Media Inquiry

Dear Sir/Madam,

At any time in the last week, did the NRC inform the American public that:

1. The federal government **had the capability** to monitor any radiation threats that could possibly come onto U.S. soil?
2. The federal government **was actively monitoring** any radiation threats that might possibly come onto U.S. soil?
3. The federal government **would take proactive steps to inform** the American public should a radiation threat on U.S. soil become imminent?

By all appearances, it seems that the federal government told the American public nothing about its detection capabilities, its monitoring activity and its willingness to inform the American public until particles were first detected in Sacramento and Washington state.

I am aware of the comments Mr. Jaczko made on 14 March (copied below my signature.)

My deadline is Monday noon.

Thank you,

000|370

Steve

Steven B. Krivit
Editor, New Energy Times
369-B Third Street | Suite 556 | San Rafael, California | USA 94901
T 310.470.8189 | M (b)(6) | F 213.226.4274
www.newenergytimes.com

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Original reporting on leading-edge energy research and technologies

CBS: March 14
U.S. nuclear agency chief leaves reporters with more questions than answers
http://www.cbsnews.com/8301-503544_162-20043074-503544.html
When I asked whether harmful radiation from Japan could reach America under a worst case scenario, Mr. Jaczko said it was "very unlikely."

Jaczko: "Information about harmful - the lack of any harmful impacts to the US is simply based on the nature of these reactors and the large distances obviously between those and any US territories so you just aren't going to have any radiological materials by the time it travels those large distances that could present any risk to the American public."

Apparently even the NRC was unsettled by that answer, because shortly after the briefing I received an unprompted email from a senior NRC official offering a more definitive response: "Based on the type of reactor and nature of the events, NRC expert analysts see no scenarios in which harmful levels of radiation would reach Hawaii, Alaska, the U.S. Territories or the West Coast of the United States."

From: McIntyre, David
To: OPA Resource; stevek@newenergytimes.com
Subject: RE: [2] Fwd: Media Inquiry
Date: Sunday, March 20, 2011 2:41:00 PM

I'm not sure I understand the question. Several agencies are involved in modeling how the radiation might make its way across the Pacific, using data from the plant and prevailing meteorological conditions. Again, DOE's NARAC (National Atmospheric Release Assessment Center) at Lawrence Livermore Lab is doing most of that. And you can call the DOE number I gave you in my earlier reply. In the unlikely event that projections showed radiation might be high enough to recommend protective actions, of course the government would warn the public.

David McIntyre
NRC Public Affairs

From: Steve Krivit [mailto:stevek@newenergytimes.com]
Sent: Sunday, March 20, 2011 3:35 PM
To: OPA Resource
Subject: [2] Fwd: Media Inquiry

Dear Sir/Madam,

I realized that I made the assumption that the federal government has the capability to warn the American public of radiation fallout before the fallout actually lands on American soil. Does the government in fact have this capability, and if so, can you provide any details?

Steve

Date: Sun, 20 Mar 2011 10:13:00 -0800
To: OPA.Resource@nrc.gov
From: Steve Krivit <stevek@newenergytimes.com>
Subject: Media Inquiry

Dear Sir/Madam,

At any time in the last week, did the NRC inform the American public that:

1. The federal government **had the capability** to monitor any radiation threats that could possibly come onto U.S. soil?
2. The federal government **was actively monitoring** any radiation threats that might possibly come onto U.S. soil?
3. The federal government **would take proactive steps to inform** the American public should a radiation threat on U.S. soil become imminent?

By all appearances, it seems that the federal government told the

From: McIntyre, David
To: Regina Bediako
Subject: RE: stakeouts at NRC public meeting Monday
Date: Sunday, March 20, 2011 1:21:00 PM

Hi Regina – sorry to be late getting back to you. C-span is actually going to do the video pool. The meeting is expected to end promptly at 11 am; no Commissioners will be available for stakeouts afterward. You can set up a camera outside our buildings, but I don't know what use that will be actually. It looks like even us Public Affairs types won't be going on camera, in order to keep the focus on the briefing itself.

Regards,
Dave McIntyre
NRC Public Affairs

From: Regina Bediako [mailto:bediako@nhkdc.com]
Sent: Friday, March 18, 2011 7:39 PM
To: McIntyre, David
Subject: stakeouts at NRC public meeting Monday

Hi David,

I wanted to ask about the NRC meeting on Monday – I know CBS is going to be network pool, but we were thinking about sending our own cameraperson to be available for stakeouts. I don't know too much about the NRC facility, though; would we be able to bring a camera onto the grounds? And to that end, is there any likelihood that one or more of the commissioners will do a stakeout? And lastly, would you happen to have any idea how long the meeting is supposed to last? My reporter has a liveshot in the morning, but might be able to come later depending on how long the meeting goes (12pm or 1pm, perhaps?)

Thanks,
Regina

Regina Bediako
NHK (Japan Broadcasting Corporation)
2030 M St NW, Suite 706
Washington, D.C. 20036
Office: (202) 828-5180, ext. 111 Cell: (b)(6)

000|371

From: Regina Bediako
To: McIntyre, David
Subject: Re: stakeouts at NRC public meeting Monday
Date: Sunday, March 20, 2011 11:58:45 PM

Hi David,

Thanks for the info! We'll forgo the camera. And actually, I just wanted to give you a heads-up since I was told you're trying to get an idea of how many to expect, I'm not sure we'll be able to make it. My reporter has a liveshot at 10, and I will be helping to prepare a related story. Apologies for all the RSVPs; we would much rather get the story in person instead of over a feed, but I don't see at this point if we will be able to make that work.

Regina Bediako
NHK Japan Broadcasting
Sent from my iPhone

On Mar 20, 2011, at 1:21 PM, "McIntyre, David" <David.McIntyre@nrc.gov> wrote:

> Hi Regina – sorry to be late getting back to you. C-span is actually going to do the video pool. The meeting is expected to end promptly at 11 am; no Commissioners will be available for stakeouts afterward. You can set up a camera outside our buildings, but I don't know what use that will be actually. It looks like even us Public Affairs types won't be going on camera, in order to keep the focus on the briefing itself.
>
> Regards,
>
> Dave McIntyre
>
> NRC Public Affairs
>
> **From:** Regina Bediako [mailto:bediako@nhkdc.com]
> **Sent:** Friday, March 18, 2011 7:39 PM
> **To:** McIntyre, David
> **Subject:** stakeouts at NRC public meeting Monday
>
> Hi David,

000/372

I wanted to ask about the NRC meeting on Monday – I know CBS is going to be network pool, but we were thinking about sending our own cameraperson to be available for stakeouts. I don't know too much about the NRC facility, though; would we be able to bring a camera onto the grounds? And to that end, is there any likelihood that one or more of the commissioners will do a stakeout? And lastly, would you happen to have any idea how long the meeting is supposed to last? My reporter has a liveshot in the morning, but might be able to come later depending on how long the meeting goes (12pm or 1pm, perhaps?)

Thanks,

Regina

Regina Bediako

NHK (Japan Broadcasting Corporation)

2030 M St NW, Suite 706

Washington, D.C. 20036

Office: (202) 828-5180, ext. 111 / Cell: (b)(6)

From: Loyd, Susan
To: Brenner, Eliot; Batkin, Joshua; Harrington, Holly; McIntyre, David
Subject: Nbc meet the press
Date: Sunday, March 20, 2011 11:28:30 AM

Chu was scheduled to be on Meet the Press but did not see him unless I missed him while switching channels. They had a segment on future of nuclear power with Senators Kerry, Levin, Sessions. Maybe after Chu's snafu on CNN earlier over seismic and Diablo Canyon, he picked up his marbles and went home.

Sent from an NRC Blackberry
Susan Loyd
(b)(6)

000373

From: Loyd, Susan
To: Batkin, Joshua; Brenner, Eliot; McIntyre, David; Harrington, Holly
Subject: ABC energy now
Date: Sunday, March 20, 2011 11:21:11 AM

Dave Lochbaum, Jarret Adams of Areva; Peter Bradford, and Arnie Gunderson all on CBS Energy Now. Did not see Chu on CBS face the nation. . They were all about Libya.

Sent from an NRC Blackberry
Susan Loyd
(b)(6)

000 | 374

From: Brenner, Eliot
To: McIntyre, David
Subject: Fw: Suggested change to Qs and As March 21 Commission Meeting
Date: Sunday, March 20, 2011 1:17:37 PM

Fyi
Eliot Brenner
Director, Office of Public Affairs
US Nuclear Regulatory Commission
Protecting People and the Environment
301 415 8200
C (b)(6)
Sent from my Blackberry

From: Bowman, Eric
To: Sola, Clara; Holahan, Gary; Wilson, George; Uhle, Jennifer; Milligan, Patricia; Salley, MarkHenry; Brenner, Eliot; Piccone, Josephine; Doane, Margaret; Kammerer, Annie; Collins, Timothy; Harrison, Donnie
Cc: Howe, Allen; Giitter, Joseph; McGinty, Tim; Quay, Theodore; Blount, Tom; Rosenberg, Stacey
Sent: Sun Mar 20 12:28:14 2011
Subject: Suggested change to Qs and As March 21 Commission Meeting

The second question and answer on page 4 regarding SFP currently reads as follows (emphasis added to the answer):

Q: ***Can a zirconium fuel fire be prevented by wide spacing of spent fuel assemblies in the spent fuel pool?***

A: Wider spacing would help in preventing a fire. Preventing a fire requires coolability in absence of water submersion. This depends on the heat and the assembly arrangement in the pool. A **checkerboard** arrangement (no two assemblies in adjacent locations) is coolable in about one third the time needed for a fully loaded (no open locations) pool. Other arrangements can also mitigate the potential of the onset of zirconium fires.

It may be worth considering modifying the second sentence slightly because the checkerboard pattern is not the pattern we required for resolution of B.5.b, with a follow on to 10 CFR 50.54(hh)(2), which consists of a 1 x 4 pattern (no hot (high-powered) assembly sharing an adjacent cold (low-powered) assembly with another hot assembly, leaving a "knight's move" between hot assemblies). As written, the sentence is also not technically correct because the checkerboard pattern alternated hot and cold assemblies rather than assemblies and empty spaces as is implied by the parenthetical note. The analysis I'm familiar with on the subject is at ML081680027. As written, this answer begs the question of why we don't require the described arrangement, which would actually halve the capacity of the pools. I would suggest changing the second sentence to read:

A disbursed arrangement of assemblies based on their decay heat is coolable in significantly less time than that needed for a uniformly loaded pool. Other arrangements can also mitigate the potential of the onset of zirconium fires.

Thanks!

000|375

From: McIntyre, David
To: Brenner, Eliot
Cc: Harrington, Holly
Subject: RE: in the OPS CTR
Date: Sunday, March 20, 2011 10:01:00 AM

He should just say "Yes, it can." Worry about being wrong when it doesn't.

Sorry if I sound cynical.

From: Brenner, Eliot
Sent: Sunday, March 20, 2011 9:55 AM
To: McIntyre, David
Cc: Loyd, Susan; Harrington, Holly
Subject: Re: in the OPS CTR

Susan pls share any notes re CHU with david and holly and me. Tnx.
Eliot Brenner
Director, Office of Public Affairs
US Nuclear Regulatory Commission
Protecting People and the Environment
301 415 8200
C (b)(6)
Sent from my Blackberry

From: McIntyre, David
To: Brenner, Eliot; Harrington, Holly
Sent: Sun Mar 20 09:49:11 2011
Subject: in the OPS CTR

Just arrived and logged in.

000376

From: Loyd, Susan
To: McIntyre, David; Harrington, Holly
Subject: Fw: Chu on cnn
Date: Sunday, March 20, 2011 9:56:19 AM

Sent from an NRC Blackberry
Susan Loyd
(b)(6)

----- Original Message -----
From: Loyd, Susan
To: Brenner, Eliot; Batkin, Joshua
Sent: Sun Mar 20 09:54:56 2011
Subject: Chu on cnn

Chu got in a bit of trouble whrn asked directly if US plants could withstand a 9.0 earhquake. He talked aboit acceleration and shaking. Was directly asked about what diablo canyon could handle. He got tied up in saying aboit 6.2

Sent from an NRC Blackberry
Susan Loyd
(b)(6)

0001377

From: Steve Krivit
To: McIntyre, David; OPA Resource
Subject: RE: [2] Fwd: Media Inquiry
Date: Sunday, March 20, 2011 3:52:12 PM

Hi David,

I'm not looking for modeling projections based on what may or may not be known at the source. I'm looking for capabilities of making radionuclide measurements as they are in transit which would provide several days' advance warning based on their current location, concentration and vector.

Which agency would be responsible for warning the public of a potential radiological hazard, as in Fukushima, of a foreign incident?
Which agency would be responsible for doing so in the event of a domestic incident?

Thanks,

Steve

At 10:41 AM 3/20/2011, McIntyre, David wrote:

> I'm not sure I understand the question. Several agencies are involved in modeling how the radiation might make its way across the Pacific, using data from the plant and prevailing meteorological conditions. Again, DOE's NARAC (National Atmospheric Release Assessment Center) at Lawrence Livermore Lab is doing most of that. And you can call the DOE number I gave you in my earlier reply. In the unlikely event that projections showed radiation might be high enough to recommend protective actions, of course the government would warn the public.
>
> David McIntyre
> NRC Public Affairs
>
> **From:** Steve Krivit [mailto:stevek@newenergytimes.com]
> **Sent:** Sunday, March 20, 2011 3:35 PM
> **To:** OPA Resource
> **Subject:** [2] Fwd: Media Inquiry
>
> Dear Sir/Madam,
>
> I realized that I made the assumption that the federal government has the capability to warn the American public of radiation fallout before the fallout actually lands on American soil. Does the government in fact have this capability, and if so, can you provide any details?
>
> Steve
>
> Date: Sun, 20 Mar 2011 10:13:00 -0800

000378

To: OPA.Resource@nrc.gov
From: Steve Krivit <stevek@newenergytimes.com>
Subject: Media Inquiry

Dear Sir/Madam,

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3. The federal government **would take proactive steps to inform** the American public should a radiation threat on U.S. soil become imminent?

By all appearances, it seems that the federal government told the American public nothing about its detection capabilities, its monitoring activity and its willingness to inform the American public until particles were first detected in Sacramento and Washington state.

I am aware of the comments Mr. Jaczko made on 14 March (copied below my signature.)

My deadline is Monday noon.

Thank you,

Steve

Steven B. Krivit
Editor, New Energy Times
369-B Third Street | Suite 556 | San Rafael, California | USA 94901
T 310.470.8189 | M (b)(6) | F 213.226.4274
www.newenergytimes.com

Original reporting on leading-edge energy research and technologies

CBS: March 14
U.S. nuclear agency chief leaves reporters with more questions than answers
http://www.cbsnews.com/8301-503544_162-20043074-503544.html
When I asked whether harmful radiation from Japan could reach America under a worst case scenario, Mr. Jaczko said it was "very unlikely."

Jaczko: "Information about harmful - the lack of any harmful impacts to the US is simply based on the nature of these reactors and the large

distances obviously between those and any US territories so you just aren't going to have any radiological materials by the time it travels those large distances that could present any risk to the American public."

Apparently even the NRC was unsettled by that answer, because shortly after the briefing I received an unprompted email from a senior NRC official offering a more definitive response: "Based on the type of reactor and nature of the events, NRC expert analysts see no scenarios in which harmful levels of radiation would reach Hawaii, Alaska, the U.S. Territories or the West Coast of the United States."

From:	Scott, Michael
Sent:	Sunday, March 20, 2011 9:38 AM
To:	LIA03 Hoc
Subject:	RE: Request for information for contact purposes

As noted and modified below.

From: LIA03 Hoc
Sent: Sunday, March 20, 2011 8:49 AM
To: Dorman, Dan; Scott, Michael; Blamey, Alan; Giessner, John; Taylor, Robert; Jackson, Todd; Miller, Marie; Ali, Syed; Sheikh, Abdul; Way, Ralph; Ramsey, Jack
Cc: LIA02 Hoc
Subject: Request for information for contact purposes

All,

Please respond only to me (not to all as your response will have PII) to provide the information requested below. We need this information for ongoing contact purposes, and to make sure you have the telephonic equipment you need. Also please note that other travelers in your group cannot sign for your dosimeters. You need to stop by the Ops Center, International Liaison desk, to personally sign for that equipment.

NRC TRAVELERS IN JAPAN

Name	Phone Number	Email	Flight Arrival (in Japan Time)	Flight Arrival (in Eastern Daylight Time)	Return date to U.S.	Home telephone #	Emergency contact name	Do you need a blackberry &/or has it been internationally enabled?	Have you picked up your dosimeter
Dan Dorman Deputy Director, NMSS		Daniel.Dorman@nrc.gov							
Mike Scott Deputy Director (Acting), Division of Systems Analysis, RES	301-251-7524	Michael.Scott@nrc.gov				(b)(6)	(b)(6)	I have one. Will hopefully get it enabled Monday.	Not yet
Alan Blamey, RII *TITLE?*		Alan.Blamey@nrc.gov							
Jack Giessner, RIII *TITLE?*		@nrc.gov							
Rob Taylor SG Tube Integrity and Chemical		Robert.Taylor@nrc.gov							

000/379

Engineering Branch, NRR									
Todd Jackson Commercial and R&D Branch, DNMS, RI		Timothy.kolb@nrc.gov							
Marie Miller Chief, Material Security and Industrial Branch, RI		Marie.Miller@nrc.gov							
Syed Ali Senior Level Advisor, Div of Engineering, RES		Syed.Ali@nrc.gov							
Abdul Sheikh, NRR ***TITLE?***		Abdul.Sheikh@nrc.gov							
Ralph Way, NSIR ***TITLE?***		Ralph.Way@nrc.gov							
Jack Ramsey, Senior Level Advisor, OIP		Jack.Ramsey@nrc.gov							

From: Kreuter, Jane
Sent: Monday, March 21, 2011 1:57 PM
To: LIA03 Hoc
Subject: Updated
Attachments: 2nd set of Travelers to Japan.xlsx

Mike Scott is here in the office and I got his info. It is on the attachment

Jane A. Kreuter
U.S. Nuclear Regulatory Commission
Office of International Programs
Phone: 301-415-1780
Fax: 301-415-2395
E-Mail: Jane.Kreuter@nrc.gov

000380

Emergency Contact Information at the US Embassy- Tokyo JapanEmbassyTaskForce@state.gov

Phone # 81-3-3224-5530

First Name	Last Name	BB #	Emergency Contact	Emergency Contact #	Emergency Contact Email
Dan	Dorman	(b)(6)	(b)(6)	(b)(6)	
Mike	Scott				(b)(6)
Alan	Blamey				
Jack	Giessner				
Rob	Taylor				
Todd	Jackson				
Marie	Miller				
Syed	Ali				
Abdul	Sheikh				
Ralph	Way				
Jack	Ramsey				(b)(6)

Couret, Ivonne

From: Cool, Donald
Sent: Monday, March 21, 2011 9:24 AM
To: Cool, Donald; McIntyre, David; Couret, Ivonne; Holahan, Vincent
Subject: RE: WSJ inquiry on radiation numbers

Dave

Just remembered that I also have a 5 pm call OIP set up with folks from Indonesia about the Japan issues. I suppose 4 pm is available....

-----Original Message-----
From: Cool, Donald
Sent: Monday, March 21, 2011 9:21 AM
To: McIntyre, David; Couret, Ivonne; Holahan, Vincent
Subject: RE: WSJ inquiry on radiation numbers

Dave

I come back to the Op Center for the 3 - 11 shift tonight, so I could probably talk to him somewhere along there. I know I have the Congressional Staffer brief at 3 pm, and that went 45 minutes last time.

Donald A. Cool

-----Original Message-----
From: McIntyre, David
Sent: Monday, March 21, 2011 9:18 AM
To: Couret, Ivonne; Holahan, Vincent; Cool, Donald
Subject: Re: WSJ inquiry on radiation numbers

Vince, Don: Would either of you be available to talk to this reporter this afternoon?

Thx
Dave

David McIntyre
NRC Office of Public Affairs
(b)(6)
301-415-8200 (office)
Sent from my BlackBerry, which is wholly respnsble for all typoos.

----- Original Message -----
From: Couret, Ivonne
To: McIntyre, David
Sent: Mon Mar 21 09:07:53 2011
Subject: FW: WSJ inquiry on radiation numbers

Can you handle this or shall I get someone else, if so who can? Ivonne

Ivonne L. Couret
Public Affairs Officer
Office of Public Affairs

000381

Media Desk
opa.resource@nrc.gov
301-415-8200

Visit our online photo gallery. Incorporate graphics and photographs to tell your story!
http://www.nrc.gov/reading-rm/photo-gallery/

2010-2011 Information Digest - Where you can find NRC Facts at a Glance http://www.nrc.gov/reading-rm/doc-collections/nuregs/staff/sr1350/

-----Original Message-----
From: Janbergs, Holly On Behalf Of OPA Resource
Sent: Monday, March 21, 2011 9:06 AM
To: Couret, Ivonne
Subject: FW: WSJ inquiry on radiation numbers

-----Original Message-----
From: Carl Bialik (b)(6)
Sent: Sunday, March 20, 2011 11:33 PM
To: OPA Resource
Subject: WSJ inquiry on radiation numbers

OPA,
I write a column about numbers for the Wall Street Journal:
http://blogs.wsj.com/numbersguy/
In light of the nuclear plant's problems in Japan, I'm interested in writing a piece that explains aspects of radiation math, for instance:
The various units of radiation -- sieverts, rems, curies, grays, rads, etc. -- and the difference between what they measure, between radioactivity, absorbed dose, dose equivalent and exposure.
The difference between absolute readings and exposure over time.
How this is all measured, and how reliable it is.
How well the health effects are understood -- and does the risk increase linearly with exposure, or what is the relationship? How much does it differ by body weight, age, general health levels and other factors?
Is there someone with NRC who is available to answer questions about these sorts of issues, by phone or email?
Is there anyone else you'd suggest I contact?
Thanks,
Carl Bialik
(b)(6)

Kock, Andrea

From: Franovich, Mike
Sent: Sunday, March 20, 2011 8:20 AM
To: Nieh, Ho
Subject: RE: UPDATE: 2000 Telecon on Fukushima Daiichi Event

No surprise to me. The winds/jet stream carry miniscule traces. I would not be surprise if a barely detectable amount is seen at OWFN/TWFN. We could do surveys on the roof of the building.

-----Original Message-----
From: Nieh, Ho
Sent: Saturday, March 19, 2011 10:51 PM
To: Franovich, Mike
Subject: RE: UPDATE: 2000 Telecon on Fukushima Daiichi Event

I-131 on West Coast? Wow. I would not have expected that - but I'm no dose specialist by any means.

Ho

Ho Nieh
Chief of Staff
Office of Commissioner William C. Ostendorff U.S. Nuclear Regulatory Commission
(301) 415-1811 (office)
(b)(6)
(301) 415-1757 (fax)
ho.nieh@nrc.gov

From: Franovich, Mike
Sent: Saturday, March 19, 2011 10:25 PM
To: Ostendorff, William
Cc: Nieh, Ho; Warnick, Greg; Kock, Andrea; Zorn, Jason
Subject: UPDATE: 2000 Telecon on Fukushima Daiichi Event

Brian Sheron led the call (Virgilio on the line). A much improved briefing that lasted 40 minutes this evening.

- Earlier this afternoon, Borchardt met with representatives from the U.S industry, Naval Reactors, and DOE. The purpose was to discuss having industry mobilize with their Japanese counterparts to take a leadership role in the accident management and follow-up. The NRC does not want to be viewed as managing this accident. Industry reps are engaged with Japanese nuclear industry. GE and Westinghouse worked through the Hitachi and Toshiba companies in Japan as the conduits to Japan nuclear industry.

- Industry will have a meeting at INPO on Monday, actions measure in days not weeks. Will propose to NRC plan.

- Brian was on a 4 pm call with NSC and other agencies involved. Status summary provided by each agency. Pete Lyons came to NRC and sat in with Brian on the call.

- 6:00 pm call with USAID on some complications with the 4 train seawater system to be shipped to Fukushima on a C17 transport from Australia. Original cost of systems would be $750k but then Bechtel said it

000382

would be $9.6 million. USAID does not have that money and so the shipment was stopped. During conference call USAID asked if the equipment will still be needed. NRC said now not needed as first line of defense but would be a backup if the current equipment on site failed. Some political implications if we don't send anything. So USAID worked with DOD (DOD has money) but one train will be shipped for now based on NRC recommendation. Waiting on DOD paycom approval.

· PMT update: No new info. Our last aerial data is now 36 hours old. No new data available on dose rates at the Daiichi site.

· PMT RASCAL runs being redone assuming a "realistic" worst case even though plant conditions are improving but staff still including 100 meltdown of Unit 4 SFP. The source term that was used for the NRC 50 mile evacuation Press Release also assumed no water in Unit 4 spent fuel pool.

· No new info on I-131 levels at San Onofre and Diablo Canyon.

· Daiichi units status in the LIA report. Covered again on phone call. Also Unit 3 completed a 13 hour sprays of the top of Rx Building using a 70 foot boom for the sprayers off an unmanned fire truck. Appears to be effective. Unit 4 spraying now in progress. Restarted spent fuel pool cooling at Unit 5.

From: OST01 HOC
Sent: Monday, March 21, 2011 11:41 AM
To: OPA Resource
Cc: LIA06 Hoc; PMT07 Hoc; FOIA Response.hoc Resource
Subject: FW: Radioactive contamination and radiation sickness
Attachments: image001.gif

Scott Burnell recommended that this request be forwarded to the American Health Physics Society.

Tony McMurtray
EST Coordinator

From: HOO Hoc
Sent: Monday, March 21, 2011 9:47 AM
To: LIA07 Hoc; OST01 HOC; OST02 HOC; OST03 HOC
Subject: FW: Radioactive contamination and radiation sickness

---

From: Adams, Alexander
Sent: Monday, March 21, 2011 9:42 AM
To: HOO Hoc
Subject: FW: Radioactive contamination and radiation sickness

Per the instructions in the Operations Center Bulletin to employees, I am forwarding this request for information related to the nuclear reactors in Japan.

Alexander Adams Jr.
Senior Project Manager
Reserach and Test Reactor Licensing Branch
U.S. Nuclear Regulatory Commission
MS O-12-D-3
Washington, DC 20555

e-mail Alexander.Adams@nrc.gov
Phone 301-415-1127

From: Mohamad I. Al-Sheikhly [mailto:mohamad@umd.edu]
Sent: Friday, March 18, 2011 2:04 AM
To: William E. Bentley; hinoue-contact; Jeffrey R. Lapides
Cc: Adams, Alexander
Subject: RE: Radioactive contamination and radiation sickness

Hi Bill and Jeff,

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We really don't know the details about how much people received radioactive materials, since the amount depends on the distance from the reactor.

The best way is to contact the US-NRC. I am ccing Mr. Alexander Adams of the NRC on this e-mail.

Best,

Mohamad

From: William E. Bentley
Sent: Thursday, March 17, 2011 3:42 PM
To: hinoue-contact; Jeffrey R. Lapides
Cc: Mohamad I. Al-Sheikhly
Subject: RE: Radioactive contamination and radiation sickness

Hi Hiroshi,
I am copying Dr. Mohamad Al-Sheikhly who is head of our nuclear reactor facility on our campus. He is knowledgeable in the field.

Mohamad, do you have some knowledge relative to exposure that you could pass along to our colleagues at Canon? Mr. Adachi (who is referenced) is the CEO of Canon USA. Or, do you have someone who we might be able to contact?
Best,
Bill

From: hiroshi.inoue@canon.uslifesciences.com [mailto:hiroshi.inoue@canon.uslifesciences.com]
Sent: Thursday, March 17, 2011 3:05 PM
To: Jeffrey R. Lapides; William E. Bentley
Subject: Radioactive contamination and radiation sickness

Jeff and Bill

I was requested documentation or information from an expert through UMD on radiation sickness caused by radioactive pollution from nuke plant accidents by Mr. Adachi. He wants to deliver it to Canon Inc. on behalf of Japanese employees. So do you have any idea? Thank you for your cooperation.

Canon

Hiroshi Inoue
Sr. Fellow, Canon U.S.A. &
Canon US Life Science Division

Canon U.S.A., Inc.
9800 Medical Center Drive, Rockville MD 20850
www.usa.canon.com
hiroshi.inoue@canon.uslifesciences.com
T 301.517.8794 C (b)(6)

Bozin, Sunny

From: Bozin, Sunny
Sent: Monday, March 21, 2011 1:36 PM
To: Wright, Darlene; Baggett, Steven; Batkin, Joshua; Blake, Kathleen; Bradford, Anna; Bubar, Patrice; Bupp, Margaret; Chairman Temp; Clark, Lisa; Coggins, Angela; Cordes, John; Crawford, Carrie; Davis, Roger; Fopma, Melody; Franovich, Mike; Gibbs, Catina; Hart, Ken; Harves, Carolyn; Herr, Linda; Hipschman, Thomas; KLS Temp; Kock, Andrea; Lepre, Janet; Loyd, Susan; Mamish, Nader; Marshall, Michael; Monninger, John; Orders, William; Pace, Patti; Poole, Brooke; Reddick, Darani; Laufer, Richard; Bavol, Rochelle; Rothschild, Trip; Savoy, Carmel; Sharkey, Jeffry; Shea, Pamela; Snodderly, Michael; Sosa, Belkys; Speiser, Herald; Svinicki, Kristine; Temp, WCO; Temp, WDM; Thoma, John; Warren, Roberta; Zorn, Jason; Apostolakis, George; Temp, GEA; Tadesse, Rebecca; Castleman, Patrick; Montes, David; Dhir, Neha; Adler, James; Jimenez, Patricia; Muessle, Mary; Nieh, Ho; Ostendorff, William; Warnick, Greg; Pearson, Laura; Lui, Christiana; Lisann, Elizabeth
Cc: Lewis, Antoinette
Subject: Commissioner Ostendorff's VOTE FOR COMGBJ-11-0002 (NRC Actions Following the Events in Japan)
Attachments: WCO-COMGBJ-11-0002 vote.pdf

Commissioner Ostendorff's vote is attached.

000/384

Bozin, Sunny

From: Nieh, Ho
Sent: Monday, March 21, 2011 11:36 AM
To: Bozin, Sunny
Subject: Fw: VOTE SHEET FOR COMGBJ-11-0002 (NRC Actions Following the Events in Japan))
Attachments: xxx-cmt-CmGBJ11-0002.doc

Sunny,

Please prepare vote sheet.

Approve, comments below.

I appreciate the efforts of the Chairman and the staff in developing this proposal.

Thanks,

Ho

Sent via BlackBerry

Ho Nieh
Chief of Staff
Office of Commissioner William C. Ostendorff
U.S. Nuclear Regulatory Commission
(301) 415-1811 (office)
(b)(6)
(301) 415-1757 (fax)
ho.nieh@nrc.gov

From: Wright, Darlene
To: Baggett, Steven; Batkin, Joshua; Blake, Kathleen; Bozin, Sunny; Bradford, Anna; Bubar, Patrice; Bupp, Margaret; Chairman Temp; Clark, Lisa; Coggins, Angela; Cordes, John; Crawford, Carrie; Davis, Roger; Fopma, Melody; Franovich, Mike; Gibbs, Catina; Hart, Ken; Harves, Carolyn; Herr, Linda; Hipschman, Thomas; KLS Temp; Kock, Andrea; Lepre, Janet; Loyd, Susan; Mamish, Nader; Marshall, Michael; Monninger, John; Orders, William; Pace, Patti; Poole, Brooke; Reddick, Darani; Laufer, Richard; Bavol, Rochelle; Rothschild, Trip; Savoy, Carmel; Sharkey, Jeffry; Shea, Pamela; Snodderly, Michael; Sosa, Belkys; Speiser, Herald; Svinicki, Kristine; Temp, WCO; Temp, WDM; Thoma, John; Warren, Roberta; Zorn, Jason; Apostolakis, George; Temp, GEA; Tadesse, Rebecca; Castleman, Patrick; Montes, David; Dhir, Neha; Adler, James; Jimenez, Patricia; Muessle, Mary; Nieh, Ho; Ostendorff, William; Warnick, Greg; Pearson, Laura; Lui, Christiana; Lisann, Elizabeth
Cc: Lewis, Antoinette
Sent: Mon Mar 21 11:30:09 2011
Subject: VOTE SHEET FOR COMGBJ-11-0002 (NRC Actions Following the Events in Japan))

Please save the attached Word file for use in voting on the subject paper. In saving the file, be sure to replace the XXX with your Commissioner's initials and insert the Commissioner's name in the document. Upon completion of the vote, be sure to insert the date and the /RA/.

The ADAMS Accession # for the SECY is unavailable at this time.

RESPONSE SHEET

TO: Annette Vietti-Cook, Secretary

FROM: COMMISSIONER OSTENDORFF

SUBJECT: COMGBJ-11-0002 – NRC ACTIONS FOLLOWING THE EVENTS IN JAPAN

Approved __XX__ Disapproved _____ Abstain _____

Not Participating _____

COMMENTS: Below __XX__ Attached ___ None ___

I appreciate the efforts of the Chairman and the staff in developing this proposal. As noted during the dialogue with the Executive Director for Operations during today's Commission meeting, I wish to emphasize, though not as an edit to the proposal, that it is important, given the ambitious nature of the proposal, that the task force stay focused on the scope of the review.

SIGNATURE

3/21/2011
DATE

Entered on "STARS" Yes __XX__ No ___

Nelson, Robert

From: Nelson, Robert
Sent: Monday, March 21, 2011 11:07 AM
To: Nguyen, Quynh
Subject: Action: Use this version instead
Attachments: NRC QA (2).doc

Here's the 50 mile EPZ Q&A

NELSON

From: Leeds, Eric
Sent: Friday, March 18, 2011 5:53 PM
To: Lew, David
Cc: Nelson, Robert; McCree, Victor; Dean, Bill; Pederson, Cynthia; Collins, Elmo
Subject: FW: Use this version instead

Dave –

Attached is a start at responding to the Q on 50 miles. However, we need to add information about the issues at Fukushima that specifically led us to making that decision, including the lack of confirmed information, unavailability of on the ground and overhead monitoring that we would have here in the US, uncertainty in the conditions, etc etc, which lead the agency to take a more conservative position.

We'll continue to work it and get you what we can.

Eric J. Leeds, Director
Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
301-415-1270

From: Milligan, Patricia
Sent: Friday, March 18, 2011 5:25 PM
To: Leeds, Eric
Subject: Use this version instead

From: Milligan, Patricia
Sent: Friday, March 18, 2011 4:46 PM
To: Leeds, Eric
Subject: Fw: Seismic Q&As March 17th 2am update

Sent from my NRC Blackberry
Patricia A Milligan, CHP RPh
(b)(6)

From: Milligan, Patricia
To: Thaggard, Mark

000/385

Sent: Fri Mar 18 16:44:07 2011
Subject: Fw: Seismic Q&As March 17th 2am update

Sent from my NRC Blackberry
Patricia A Milligan, CHP RPh
(b)(6)

From: Milligan, Patricia
To: Nelson, Robert
Sent: Fri Mar 18 16:16:09 2011
Subject: Fw: Seismic Q&As March 17th 2am update

Sent from my NRC Blackberry
Patricia A Milligan, CHP RPh
(b)(6)

From: Milligan, Patricia
To: Howe, Allen
Cc: McDermott, Brian
Sent: Fri Mar 18 12:51:23 2011
Subject: RE: Seismic Q&As March 17th 2am update

Allan
Please consider the attached question for the Q&As

From: Howe, Allen
Sent: Thursday, March 17, 2011 3:43 PM
To: Doane, Margaret; Westreich, Barry; Gratton, Christopher; Boska, John; Scott, Michael; Wittick, Susan; Merzke, Daniel; Deegan, George; Williams, Kevin; Milligan, Patricia; Bajwa, Chris; Andersen, James
Subject: FW: Seismic Q&As March 17th 2am update

Current version of Q&A from Ops center.

Allen

From: Kammerer, Annie
Sent: Thursday, March 17, 2011 2:36 AM
To: Kammerer, Annie; Hiland, Patrick; Skeen, David; Case, Michael; RST01 Hoc
Cc: Howe, Allen; Nelson, Robert; Stutzke, Martin; Giitter, Joseph; Rihm, Roger; McDermott, Brian; Hasselberg, Rick; Chokshi, Nilesh; Munson, Clifford; Cook, Christopher; Flanders, Scott; Ross-Lee, MaryJane; Brown, Frederick; Giitter, Joseph; Howe, Allen; Ruland, William; Dudes, Laura; Karas, Rebecca; Ake, Jon; Munson, Clifford; Hogan, Rosemary; Uhle, Jennifer; Marshall, Michael; Uselding, Lara; Randall, John; Allen, Don; Burnell, Scott; Hayden, Elizabeth; Pires, Jose; Graves, Herman; Candra, Hernando; Murphy, Andrew; Murphy, Andrew; Pires, Jose; Hogan, Rosemary; Sheron, Brian; Dricks, Victor; Warnick, Greg; Reynoso, John; Lantz, Ryan; Markley, Michael; Orders, William; Santiago, Patricia; Snodderly, Michael; Baggett, Steven; Sosa, Belkys; Davis, Roger; Franovich, Mike; Castleman, Patrick; Sharkey, Jeffry; Boska, John; Ma, John; Tegeler, Bret; Patel, Pravin; Shams, Mohamed; Morris, Scott; Brenner, Eliot; Harrington, Holly; Seber, Dogan; Ledford, Joey; Johnson, Michael; Virgilio, Martin; Holahan, Vincent; Bergman, Thomas
Subject: Seismic Q&As March 17th 2am update

All,

As promised, a sharepoint site has been set up where our friends in NRR will be posting the latest version of the Seismic Q&A document on an ongoing basis. If someone would prefer to use the sharepoint site, instead of being on this distribution list, please let me know...
http://portal.nrc.gov/edo/nrr/NRR%20TA/FAQ%20Related%20to%20Events%20Occuring%20in%20Japan/Forms/AllItems.aspx

This latest update has a number of new questions (not many with answers today, but we are working hard). A high priority question we are working on is "how many plants are near a mapped active fault". We're focusing on anything within 50 miles. We're also pulling relevant questions from the congressional inquiries we just received; and will also give these high priority to support any needs by NRR.

Many new figures and some draft fact sheets have added to the "additional information" section. These include the NRO half of a tsunami fact sheet...a description of the tsunami research is still to come from RES.

Some good news: Yesterday's version seems to have been widely forwarded around the agency. So, we are also starting to get some excellent questions from staff looking forward. This is allowing us to feel that we are finally getting out in front of things to a small degree. Also, our team has grown and we now have someone acting as source of seismic expertise for the 11pm to 7 am shift. This means that we now have seismic experts available to the RST and OPA at the Op Center 24 hours, with 2 people during the day. That extra support is allowing us to get this out at least an hour earlier today ☺

We are continuing to compile the questions that come in and update the seismic Q&A document. If you have suggested changes, or want to provide missing answers, please forward them to me for compilation.

This is a living document and will be updated daily in the foreseeable future.

Happy St. Paddy's Day. May the world (especially our friends in Japan) have the luck of the Irish today.

Cheers,
Annie

Dr. Annie Kammerer, PE
Senior Seismologist and Earthquake Engineer
US Nuclear Regulatory Commission
Office of Nuclear Regulatory Research
Washington DC 20555
(b)(6) mobile
BB

From: Kammerer, Annie
Sent: Tuesday, March 15, 2011 3:41 AM
To: Hiland, Patrick; Skeen, David
Cc: Howe, Allen; Nelson, Robert; Stutzke, Martin; Giitter, Joseph; Rihm, Roger; McDermott, Brian; Hasselberg, Rick; Kammerer, Annie; Chokshi, Nilesh; Munson, Clifford; Cook, Christopher; Flanders, Scott; Ross-Lee, MaryJane; Brown, Frederick; Giitter, Joseph; Howe, Allen; Case, Michael; Ruland, William; Dudes, Laura; Karas, Rebecca; Ake, Jon; Munson, Clifford; Hogan, Rosemary; Uhle, Jennifer; Marshall, Michael; Uselding, Lara; Randall, John; Allen, Don; Burnell, Scott; Hayden, Elizabeth; Pires, Jose; Graves, Herman; Candra, Hernando; Murphy, Andrew; Murphy, Andrew; Pires, Jose; Hogan, Rosemary; Sheron, Brian; Dricks, Victor; Warnick, Greg; Reynoso, John; Lantz, Ryan; Markley, Michael
Subject: latest version of Q&As

All,

This is the first draft of the seismic-specific Q&As. It is pretty rough and there are many answers still missing, but people have contributed a lot and we thought it may be useful for many people trying to answer questions coming in.

We are continuing to compile the questions that come in and update the seismic Q&A document. If you have suggested changes, or want to provide missing answers, please forward them to me for compilation.

This is a living document and will be updated daily in the foreseeable future.

Annie

Dr. Annie Kammerer, PE
Senior Seismologist and Earthquake Engineer
US Nuclear Regulatory Commission
Office of Nuclear Regulatory Research
Washington DC 20555
(b)(6) mobile
BB

Thadani, Mohan

From: Burnell, Scott
Sent: Monday, March 21, 2011 2:49 PM
To: Thadani, Mohan
Subject: RE: Preliminary Questions

laughing I thought as much. Thanks!

From: Thadani, Mohan
Sent: Monday, March 21, 2011 2:49 PM
To: Burnell, Scott; Collins, Timothy
Subject: RE: Preliminary Questions

Scott:

I left a copy of the Commission Paper on your chair.

Mohan

From: Burnell, Scott
Sent: Monday, March 21, 2011 2:31 PM
To: Thadani, Mohan; Collins, Timothy
Subject: RE: Preliminary Questions

That's a great start, Mohan, thanks – do you have an ML# or something similar for the report?

From: Thadani, Mohan
Sent: Monday, March 21, 2011 2:30 PM
To: Burnell, Scott; Collins, Timothy
Subject: RE: Preliminary Questions

Scott:

I have the final report to the Commission that shows the all Mark I (there were 24 originally) were modified by January 1995, except Browns Ferry 1 and 3, which were in extended shut down. TVA had committed to complete the modifications to Browns Ferry 1 and 3 prior to start up. I was contacted by TVA for guidance prior to start up, but I do not remember the actual date when modifications were completed.. I can bring a copy of the commission paper to you right now.

Let me know if the above information is sufficient for this go around.

Thanks

Mohan

From: Burnell, Scott
Sent: Monday, March 21, 2011 1:57 PM
To: Collins, Timothy
Cc: Thadani, Mohan
Subject: Re: Preliminary Questions

I think the memo would be a great start and might answer the question, period. Thanks!

000/386

Sent from an NRC Blackberry
Scott Burnell
(b)(6)

From: Collins, Timothy
To: Burnell, Scott
Cc: Thadani, Mohan
Sent: Mon Mar 21 13:53:09 2011
Subject: RE: Preliminary Questions

Scott,

Mohan Thadani was the issue lead for projects on this issue and can provide the best information. He thinks he can find a memo that discusses completion of the program. That would provide a bounding date for any plant. Would that suffice? It will take considerable legwork to get information on each individual plant. We might have to go to the PM for each of the 23 units.

Please put Mohan on all communications on this topic.

Tim C

From: Burnell, Scott
Sent: Monday, March 21, 2011 1:27 PM
To: Cappiello, Dina
Cc: Brenner, Eliot
Subject: RE: Preliminary Questions

That's forever as far as deadlines go, thanks!

From: Cappiello, Dina [mailto:DCappiello@ap.org]
Sent: Monday, March 21, 2011 1:25 PM
To: Burnell, Scott
Subject: RE: Preliminary Questions

Need this done by Friday. I'm off next week. SO Wednesday

From: Burnell, Scott [mailto:Scott.Burnell@nrc.gov]
Sent: Monday, March 21, 2011 1:21 PM
To: Cappiello, Dina
Cc: Brenner, Eliot
Subject: Re: Preliminary Questions

Hi Dina;

That involves another trip into the data mine. I'll see what the staff can provide -- overall deadline?

Scott

Sent from an NRC Blackberry
Scott Burnell
(b)(6)

From: Cappiello, Dina <DCappiello@ap.org>
To: Burnell, Scott

Cc: Brenner, Eliot
Sent: Mon Mar 21 13:18:51 2011
Subject: RE: Preliminary Questions

I think so. Do you know when they were installed at each of 23 plants?

From: Burnell, Scott [mailto:Scott.Burnell@nrc.gov]
Sent: Monday, March 21, 2011 1:17 PM
To: Cappiello, Dina
Cc: Brenner, Eliot
Subject: Re: Preliminary Questions

Hi Dina;

I think I can short-circuit some of this:

EVERY U.S. BWR plant with a Mark I containment installed a hardened vent. That letter was "speaking softly while carrying a big stick," essentially. The NRC was prepared to order the vents' installation, we just politely gave them the opportunity to do it "on their own," and they did.

Does that resolve your questions?

Thanks.

Scott

Sent from an NRC Blackberry
Scott Burnell
(b)(6)

From: Cappiello, Dina <DCappiello@ap.org>
To: Burnell, Scott
Cc: Brenner, Eliot
Sent: Mon Mar 21 12:38:27 2011
Subject: RE: Preliminary Questions

The primary source right now is a September 1, 1989 letter – that is online in ADAMS – TO: All holders of Operating Licenses for Nuclear Power Reactors with Mark I containments.

Here is the link, provided by your library:
http://adamswebsearch2.nrc.gov/IDMWS/DocContent.dll?library=PU_ADAMS^pbntad01&LogonID=031fdc6dfe9093c593fdd4159f803d7d&id=031220321

I will start calling the companies as a back up to see if they installed this.

From: Burnell, Scott [mailto:Scott.Burnell@nrc.gov]
Sent: Monday, March 21, 2011 12:36 PM
To: Cappiello, Dina
Cc: Brenner, Eliot
Subject: RE: Preliminary Questions

Hello Dina;

I'll be checking with the staff on your questions – what are you basing them on, by the way?

I can offer a fairly solid prediction that since your #2 refers to the pre-Internet era, it's going to take a considerable amount of time and effort to do a search.

Thanks for your patience as we work on this.

Scott

From: Cappiello, Dina [mailto:DCappiello@ap.org]
Sent: Monday, March 21, 2011 12:24 PM
To: Burnell, Scott
Subject: Preliminary Questions

Scott,

Here are my main questions on Mark I story for now:

1. **In 1989, the commission made the installation of a hardened wetwell vents voluntarily at Mark 1 reactors. Which facilities of the 23 Mark 1 containment reactors elected NOT to install this feature? Why not? Did cost play into decision not to install?**

2. **Each facility in 1989 was required to provide staff a cost for the implementation of the hardened vent by pipe replacement. I would like copies of these cost estimates.**

3. **Lastly, are there any other instances where the Congressionally-required cost-benefit analysis prevented industry operating Mark 1's from installing or retrofitting equipment?**

Dina Cappiello
Environment/Energy Reporter
The Associated Press
1100 13th Street NW, Suite 700
Washington, DC 20005
(202)-641-9446 (o)
(202)-403-3582 (f)
(b)(6)

Weaver, Tonna

From: Collins, Timothy
Sent: Monday, March 21, 2011 1:12 PM
To: Ruland, William; Bahadur, Sher
Subject: FW: Preliminary Questions

From: Collins, Timothy
Sent: Monday, March 21, 2011 1:10 PM
To: Burnell, Scott
Subject: RE: Preliminary Questions

Scott,

All BWRs with Mark I containments installed a hardened containment vent. We had orders ready, but didn't need to issue any.

Tim C

From: Burnell, Scott
Sent: Monday, March 21, 2011 12:43 PM
To: Collins, Timothy; Bahadur, Sher; Ruland, William
Subject: FW: Preliminary Questions
Importance: High

If my quick read of that letter is correct, we gave them the chance to do it voluntarily but would force a backfit under 50.59 if necessary.

Please let me know what the most appropriate interpretation is, thanks!!

From: Cappiello, Dina [mailto:DCappiello@ap.org]
Sent: Monday, March 21, 2011 12:38 PM
To: Burnell, Scott
Cc: Brenner, Eliot
Subject: RE: Preliminary Questions

The primary source right now is a September 1, 1989 letter – that is online in ADAMS – TO: All holders of Operating Licenses for Nuclear Power Reactors with Mark I containments.

Here is the link, provided by your library:
http://adamswebsearch2.nrc.gov/IDMWS/DocContent.dll?library=PU_ADAMS^pbntad01&LogonID=031fdc6dfe9093c593fdd4159f803d7d&id=031220321

I will start calling the companies as a back up to see if they installed this.

From: Burnell, Scott [mailto:Scott.Burnell@nrc.gov]
Sent: Monday, March 21, 2011 12:36 PM
To: Cappiello, Dina

000/387

Cc: Brenner, Eliot
Subject: RE: Preliminary Questions

Hello Dina;

I'll be checking with the staff on your questions – what are you basing them on, by the way?

I can offer a fairly solid prediction that since your #2 refers to the pre-Internet era, it's going to take a considerable amount of time and effort to do a search.

Thanks for your patience as we work on this.

Scott

From: Cappiello, Dina [mailto:DCappiello@ap.org]
Sent: Monday, March 21, 2011 12:24 PM
To: Burnell, Scott
Subject: Preliminary Questions

Scott,

Here are my main questions on Mark I story for now:

1. **In 1989, the commission made the installation of a hardened wetwell vents voluntarily at Mark 1 reactors. Which facilities of the 23 Mark 1 containment reactors elected NOT to install this feature? Why not? Did cost play into decision not to install?**

2. **Each facility in 1989 was required to provide staff a cost for the implementation of the hardened vent by pipe replacement. I would like copies of these cost estimates.**

3. **Lastly, are there any other instances where the Congressionally-required cost-benefit analysis prevented industry operating Mark 1's from installing or retrofitting equipment?**

Dina Cappiello
Environment/Energy Reporter
The Associated Press
1100 13th Street NW, Suite 700
Washington, DC 20005
(202)-641-9446 (o)
(202)-403-3582 (f)
(b)(6) (c)

and delete this e-mail. Thank you.
[IP_US_DISC]msk dccc60c6d2c3a6438f0cf467d9a4938

Thadani, Mohan

From: Burnell, Scott
Sent: Monday, March 21, 2011 3:03 PM
To: Cappiello, Dina
Cc: PDR Resource
Subject: RE: Preliminary Questions

Dina;

The short version is that the staff reported to the Commission on Jan. 20, 1995, that all operating plants with Mark I containments had installed the hardened vents. Browns Ferry Units 1 and 3 were in extended shutdowns at that point, but installed the vents before they restarted.

The relevant document is SECY-95-011, and that's far enough back that the Public Document Room (CCd) will have to help you get a microfiche copy.

How's that?

Scott

From: Cappiello, Dina [mailto:DCappiello@ap.org]
Sent: Monday, March 21, 2011 1:25 PM
To: Burnell, Scott
Subject: RE: Preliminary Questions

Need this done by Friday. I'm off next week. SO Wednesday

From: Burnell, Scott [mailto:Scott.Burnell@nrc.gov]
Sent: Monday, March 21, 2011 1:21 PM
To: Cappiello, Dina
Cc: Brenner, Eliot
Subject: Re: Preliminary Questions

Hi Dina;

That involves another trip into the data mine. I'll see what the staff can provide -- overall deadline?

Scott

Sent from an NRC Blackberry
Scott Burnell
(b)(6)

From: Cappiello, Dina <DCappiello@ap.org>
To: Burnell, Scott
Cc: Brenner, Eliot
Sent: Mon Mar 21 13:18:51 2011
Subject: RE: Preliminary Questions

I think so. Do you know when they were installed at each of 23 plants?

000/388

From: Burnell, Scott [mailto:Scott.Burnell@nrc.gov]
Sent: Monday, March 21, 2011 1:17 PM
To: Cappiello, Dina
Cc: Brenner, Eliot
Subject: Re: Preliminary Questions

Hi Dina;

I think I can short-circuit some of this:

EVERY U.S. BWR plant with a Mark I containment installed a hardened vent. That letter was "speaking softly while carrying a big stick," essentially. The NRC was prepared to order the vents' installation, we just politely gave them the opportunity to do it "on their own," and they did.

Does that resolve your questions?

Thanks.

Scott

Sent from an NRC Blackberry
Scott Burnell
(b)(6)

From: Cappiello, Dina <DCappiello@ap.org>
To: Burnell, Scott
Cc: Brenner, Eliot
Sent: Mon Mar 21 12:38:27 2011
Subject: RE: Preliminary Questions

The primary source right now is a September 1, 1989 letter – that is online in ADAMS – TO: All holders of Operating Licenses for Nuclear Power Reactors with Mark I containments.

Here is the link, provided by your library:
http://adamswebsearch2.nrc.gov/IDMWS/DocContent.dll?library=PU_ADAMS^pbntad01&LogonID=031fdc6dfe9093c593fdd4159f803d7d&id=031220321

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3. **Lastly, are there any other instances where the Congressionally-required cost-benefit analysis prevented industry operating Mark 1's from installing or retrofitting equipment?**

Dina Cappiello
Environment/Energy Reporter
The Associated Press
1100 13th Street NW, Suite 700
Washington, DC 20005
(202)-641-9446 (o)
(202)-403-3582 (f)
(b)(6) c)

Thadani, Mohan

From: Burnell, Scott
Sent: Monday, March 21, 2011 2:49 PM
To: Thadani, Mohan
Subject: RE: Preliminary Questions

SECY 95-011?? Someone left a copy on my desk.

From: Thadani, Mohai
Sent: Monday, March 21, 2011 2:40 PM
To: Burnell, Scott; Collins, Timothy
Subject: RE: Preliminary Questions

Scott: I did not find the SECY in ADAMS.

From: Burnell, Scott
Sent: Monday, March 21, 2011 2:31 PM
To: Thadani, Mohan; Collins, Timothy
Subject: RE: Preliminary Questions

That's a great start, Mohan, thanks – do you have an ML# or something similar for the report?

From: Thadani, Mohan
Sent: Monday, March 21, 2011 2:30 PM
To: Burnell, Scott; Collins, Timothy
Subject: RE: Preliminary Questions

Scott:

I have the final report to the Commission that shows the all Mark I (there were 24 originally) were modified by January 1995, except Browns Ferry 1 and 3, which were in extended shut down. TVA had committed to complete the modifications to Browns Ferry 1 and 3 prior to start up. I was contacted by TVA for guidance prior to start up, but I do not remember the actual date when modifications were completed.. I can bring a copy of the commission paper to you right now.

Let me know if the above information is sufficient for this go around.

Thanks

Mohan

From: Burnell, Scott
Sent: Monday, March 21, 2011 1:57 PM
To: Collins, Timothy
Cc: Thadani, Mohan
Subject: Re: Preliminary Questions

I think the memo would be a great start and might answer the question, period. Thanks!

Sent from an NRC Blackberry
Scott Burnell
(b)(6)

000/389

From: Collins, Timothy
To: Burnell, Scott
Cc: Thadani, Mohan
Sent: Mon Mar 21 13:53:09 2011
Subject: RE: Preliminary Questions

Scott,

Mohan Thadani was the issue lead for projects on this issue and can provide the best information. He thinks he can find a memo that discusses completion of the program. That would provide a bounding date for any plant. Would that suffice? It will take considerable legwork to get information on each individual plant. We might have to go to the PM for each of the 23 units.

Please put Mohan on all communications on this topic.

Tim C

From: Burnell, Scott
Sent: Monday, March 21, 2011 1:27 PM
To: Cappiello, Dina
Cc: Brenner, Eliot
Subject: RE: Preliminary Questions

That's forever as far as deadlines go, thanks!

From: Cappiello, Dina [mailto:DCappiello@ap.org]
Sent: Monday, March 21, 2011 1:25 PM
To: Burnell, Scott
Subject: RE: Preliminary Questions

Need this done by Friday. I'm off next week. SO Wednesday

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(b)(6)

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Environment/Energy Reporter
The Associated Press
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Washington, DC 20005
(202)-641-9446 (o)
(202)-403-3582 (f)
(b)(6) (c)

Nelson, Robert

From: Nelson, Robert
Sent: Monday, March 21, 2011 2:09 PM
To: Howe, Allen; Mahoney, Michael
Subject: RE: Use this version instead

Already received and posted to our web site.

NELSON

From: Howe, Allen
Sent: Monday, March 21, 2011 2:03 PM
To: Mahoney, Michael; Nelson, Robert
Subject: FW: Use this version instead

From: Markley, Michael
Sent: Monday, March 21, 2011 7:40 AM
To: Howe, Allen; Giitter, Joseph
Subject: FW: Use this version instead

fyi

From: Leeds, Eric
Sent: Friday, March 18, 2011 5:48 PM
To: Nelson, Robert; Markley, Michael
Subject: FW: Use this version instead

See attached for a Q&A on the 50 mile evacuation. I think we need to add more about the lack of data and the uncertainties dealing with an event far from our shores where we do not have our normal monitoring and confirmation processes, etc, etc, also contributed to our taking a more conservative stance with regard to evacuation. It's a start.

Eric J. Leeds, Director
Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
301-415-1270

From: Milligan, Patricia
Sent: Friday, March 18, 2011 5:25 PM
To: Leeds, Eric
Subject: Use this version instead

From: Milligan, Patricia
Sent: Friday, March 18, 2011 4:46 PM
To: Leeds, Eric
Subject: Fw: Seismic Q&As March 17th 2am update

000/390

Sent from my NRC Blackberry

Patricia A Milligan, CHP RPh
(b)(6)

From: Milligan, Patricia
To: Thaggard, Mark
Sent: Fri Mar 18 16:44:07 2011
Subject: Fw: Seismic Q&As March 17th 2am update

Sent from my NRC Blackberry
Patricia A Milligan, CHP RPh
(b)(6)

From: Milligan, Patricia
To: Nelson, Robert
Sent: Fri Mar 18 16:16:09 2011
Subject: Fw: Seismic Q&As March 17th 2am update

Sent from my NRC Blackberry
Patricia A Milligan, CHP RPh
(b)(6)

From: Milligan, Patricia
To: Howe, Allen
Cc: McDermott, Brian
Sent: Fri Mar 18 12:51:23 2011
Subject: RE: Seismic Q&As March 17th 2am update

Allan
Please consider the attached question for the Q&As

From: Howe, Allen
Sent: Thursday, March 17, 2011 3:43 PM
To: Doane, Margaret; Westreich, Barry; Gratton, Christopher; Boska, John; Scott, Michael; Wittick, Susan; Merzke, Daniel; Deegan, George; Williams, Kevin; Milligan, Patricia; Bajwa, Chris; Andersen, James
Subject: FW: Seismic Q&As March 17th 2am update

Current version of Q&A from Ops center.

Allen

From: Kammerer, Annie
Sent: Thursday, March 17, 2011 2:36 AM
To: Kammerer, Annie; Hiland, Patrick; Skeen, David; Case, Michael; RST01 Hoc
Cc: Howe, Allen; Nelson, Robert; Stutzke, Martin; Giitter, Joseph; Rihm, Roger; McDermott, Brian; Hasselberg, Rick; Chokshi, Nilesh; Munson, Clifford; Cook, Christopher; Flanders, Scott; Ross-Lee, MaryJane; Brown, Frederick; Giitter, Joseph; Howe, Allen; Ruland, William; Dudes, Laura; Karas, Rebecca; Ake, Jon; Munson, Clifford; Hogan, Rosemary; Uhle, Jennifer; Marshall, Michael; Uselding, Lara; Randall, John; Allen, Don; Burnell, Scott; Hayden, Elizabeth; Pires, Jose; Graves, Herman; Candra, Hernando; Murphy, Andrew; Murphy, Andrew; Pires, Jose; Hogan, Rosemary; Sheron, Brian; Dricks, Victor; Warnick, Greg; Reynoso, John; Lantz, Ryan; Markley, Michael; Orders, William; Santiago, Patricia; Snodderly, Michael; Baggett, Steven; Sosa, Belkys; Davis, Roger; Franovich, Mike; Castleman, Patrick; Sharkey, Jeffry; Boska, John; Ma, John; Tegeler, Bret; Patel, Pravin; Shams, Mohamed; Morris, Scott; Brenner, Eliot; Harrington, Holly;

Seber, Dogan; Ledford, Joey; Johnson, Michael; Virgilio, Martin; Holahan, Vincent; Bergman, Thomas
Subject: Seismic Q&As March 17th 2am update

All,

As promised, a sharepoint site has been set up where our friends in NRR will be posting the latest version of the Seismic Q&A document on an ongoing basis. If someone would prefer to use the sharepoint site, instead of being on this distribution list, please let me know...
http://portal.nrc.gov/edo/nrr/NRR%20TA/FAQ%20Related%20to%20Events%20Occuring%20in%20Japan/Forms/AllItems.aspx

This latest update has a number of new questions (not many with answers today, but we are working hard). A high priority question we are working on is "how many plants are near a mapped active fault". We're focusing on anything within 50 miles. We're also pulling relevant questions from the congressional inquiries we just received; and will also give these high priority to support any needs by NRR.

Many new figures and some draft fact sheets have added to the "additional information" section. These include the NRO half of a tsunami fact sheet...a description of the tsunami research is still to come from RES.

Some good news: Yesterday's version seems to have been widely forwarded around the agency. So, we are also starting to get some excellent questions from staff looking forward. This is allowing us to feel that we are finally getting out in front of things to a small degree. Also, our team has grown and we now have someone acting as source of seismic expertise for the 11pm to 7 am shift. This means that we now have seismic experts available to the RST and OPA at the Op Center 24 hours, with 2 people during the day. That extra support is allowing us to get this out at least an hour earlier today ☺

We are continuing to compile the questions that come in and update the seismic Q&A document. If you have suggested changes, or want to provide missing answers, please forward them to me for compilation.

This is a living document and will be updated daily in the foreseeable future.

Happy St. Paddy's Day. May the world (especially our friends in Japan) have the luck of the Irish today.

Cheers,
Annie

Dr. Annie Kammerer, PE
Senior Seismologist and Earthquake Engineer
US Nuclear Regulatory Commission
Office of Nuclear Regulatory Research
Washington DC 20555
(b)(6) mobile
BB

From: Kammerer, Annie
Sent: Tuesday, March 15, 2011 3:41 AM
To: Hiland, Patrick; Skeen, David
Cc: Howe, Allen; Nelson, Robert; Stutzke, Martin; Giitter, Joseph; Rihm, Roger; McDermott, Brian; Hasselberg, Rick; Kammerer, Annie; Chokshi, Nilesh; Munson, Clifford; Cook, Christopher; Flanders, Scott; Ross-Lee, MaryJane; Brown, Frederick; Giitter, Joseph; Howe, Allen; Case, Michael; Ruland, William; Dudes, Laura; Karas, Rebecca; Ake, Jon; Munson, Clifford; Hogan, Rosemary; Uhle, Jennifer; Marshall, Michael; Uselding, Lara; Randall, John; Allen, Don; Burnell, Scott; Hayden, Elizabeth; Pires, Jose; Graves, Herman; Candra, Hernando; Murphy, Andrew; Murphy, Andrew; Pires, Jose; Hogan, Rosemary; Sheron, Brian; Dricks, Victor; Warnick, Greg; Reynoso, John; Lantz, Ryan; Markley, Michael
Subject: latest version of Q&As

All,

This is the first draft of the seismic-specific Q&As. It is pretty rough and there are many answers still missing, but people have contributed a lot and we thought it may be useful for many people trying to answer questions coming in.

We are continuing to compile the questions that come in and update the seismic Q&A document. If you have suggested changes, or want to provide missing answers, please forward them to me for compilation.

This is a living document and will be updated daily in the foreseeable future.

Annie

Dr. Annie Kammerer, PE
Senior Seismologist and Earthquake Engineer
US Nuclear Regulatory Commission
Office of Nuclear Regulatory Research
Washington DC 20555
(b)(6) [redacted] mobile
BB

Nelson, Robert

From: Nelson, Robert
Sent: Monday, March 21, 2011 8:47 AM
To: OST01 HOC
Cc: Dudek, Michael; Kozal, Jason; Kahler, Robert; Williams, Kevin; Kowalczik, Jeffrey; Trocine, Leigh; Anderson, Joseph
Subject: RE: FOIA information request
Attachments: FW: ACTION: FOIA 2011-0119; image001.png

I am not responsible for the Op Center's response to this FOIA. Attached is the guidance we have distributed to the staff in my division.

R.A. Nelson

Robert A. Nelson
Captain, US Navy (Retired)
Deputy Director
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation
U.S.NRC
United States Nuclear Regulatory Commission
Protecting People and the Environment
E-mail: robert.nelson@nrc.gov | Office: (301) 415-1453 | Cell: (b)(6) | Fax: (301) 415-2102|

From: OST01 HOC
Sent: Sunday, March 20, 2011 12:05 AM
To: Nelson, Robert
Cc: Dudek, Michael; Kozal, Jason; Kahler, Robert; Williams, Kevin; Kowalczik, Jeffrey; Trocine, Leigh; Anderson, Joseph
Subject: RE: FOIA information request

Good Morning Mr. Nelson,

Scott Morris told me to send this clarification request on to you. Please notify the EST Coordinator of your decision. Whoever is on shift can be reached at this email (OST01.hoc@nrc.gov).

Thanks,
Rebecca Stone
EST Coordinator

From: Anderson, Joseph
Sent: Saturday, March 19, 2011 12:50 PM
To: OST01 HOC
Cc: Dudek, Michael; Kozal, Jason; Kahler, Robert; Williams, Kevin; Kowalczik, Jeffrey; Trocine, Leigh
Subject: RE: FOIA information request

Clarification requested. NRC Liaisons at USAID are using a USAID e-mail account (RMTPACTSU_ELNRC@ofda.gov) to communicate between Response Management Team Groups. Since this is not an NRC account, I would assume this does not apply. However, e-mails sent by and received from NRC staff from/to USAID - specifically from NRC Liaisons, would be captured as part of e-mail traffic received/sent by OPS Center teams and, as such, should be forwarded to by these respective OPS Center teams.

000/391

If this assessment is incorrect, then I would request that someone reach out to USAID to provide further clarification to USAID before we forward e-mails contained in their e-mail accounts.

From: OST01 HOC
Sent: Saturday, March 19, 2011 6:54 AM
To: Dudek, Michael; Kozal, Jason; Kowalczik, Jeffrey; Trocine, Leigh; Anderson, Joseph; Kahler, Robert; Williams, Kevin
Subject: FOIA information request

Good Morning All,

The staff of the HOC has received a broad scope FOIA request from the Associated Press requiring the release of all communications pertaining to the Japanese nuclear incidents caused by the March 11, 2011, earthquake and tsunami.

In response to this request, an email account is being created as a FOIA drop box. In the near future, you will be required to forward all emails that you have received (either to your personal email or HOC computer email) relating to these events to the established drop box. This includes emails that you have deleted but have the ability to restore. In addition, all future emails pertaining to the Japanese nuclear incidents MUST be copied to this drop box. The address is FOIAResource.hoc@nrc.gov.

A team is currently being assembled to ensure that all forwarded communications will be reviewed, and any information that qualifies for exemption (including P.I.I.) will be redacted. Therefore, you do not need to filter or redact any communication that is to be forwarded for compliance with this FOIA request.

This request has been granted expedited processing. It requires timely action from each of us to comply within the time constraints.

If you have any questions or concerns, please contact Rebecca Stone, Melissa Ralph, or Jonathan Fiske.

NOTE: If any other NRC employees take shifts at USAID, please forward this email to them. Thanks!

Nelson, Robert

From: Nelson, Robert
Sent: Monday, March 21, 2011 11:06 AM
To: Nguyen, Quynh
Subject: Action: REVISED (again) - now v2.1 of Emergency Planning Zones
Attachments: Emergency Planning Zones v2.1.pdf

Importance: High

Here's the revised FEMA EPZ info for posting.

NELSON

From: Markley, Michael
Sent: Monday, March 21, 2011 7:29 AM
To: Nelson, Robert
Cc: Tam, Peter; Polickoski, James; Wang, Alan; Guzman, Richard; Lyon, Fred
Subject: FW: REVISED (again) - now v2.1 of Emergency Planning Zones
Importance: High

fyi

From: LIA05 Hoc
Sent: Saturday, March 19, 2011 8:57 AM
To: Markley, Michael
Subject: FW: REVISED (again) - now v2.1 of Emergency Planning Zones
Importance: High

FYI

Please find attached **Version 2.1** of the EPZ Info/fact sheet that went out earlier today. Again, this may be shared freely both internally and externally.

Version 2.1 was developed to correct a minor error in one of the references (that's it).

Bonnie Sheffield Dayshift 0700-1500
Ken Wierman Nightshift 1500-2300
FEMA REP Liaison
NRC Operations Center
(301) 816-5187

******FOR OFFICIAL USE ONLY******
DO NOT RELEASE OUTSIDE OF THE FEDERAL FAMILY

From: Purvis, James [mailto:james.purvis@dhs.gov]
Sent: Saturday, March 19, 2011 8:35 AM
To: LIA05 Hoc; Ralston, Michelle; Horwitz, Steve; Sherwood, Harry; Simpson, John; Colman, Steve; Thomson, Rebecca; Hammons, Darrell; Burnside, Conrad; King, William; Hammond, Lisa; McCabe, Ron; Feighert, Dan; Fiore, Craig; Rice, John ; Hasemann, Brian; Price, John; Kinard, Richard; Robertson, Larry; Hecht, Randall; Naskrent, Gary; Flowerday, Scott; Calhoun, Nan; Valentine, Norm; Echavarria, Richard; Berkey, Johanna

000/392

Cc: Seward, Andrew; Greten, Timothy; Quinn, Vanessa; Gardner, Patricia; Sheffield, Bonnie; Wierman, Kenneth; Mauldin, Deborah; Wilt, Michael C; Connell, Renae; Flores, Kaori; jack.long@iem.com; mark.shull@comcast.net; RNoecker@icfi.com
Subject: REVISED (again) - now v2.1 of Emergency Planning Zones
Importance: High

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Enjoy!

Regards,

James H Purvis
Radiological Emergency Preparedness Program
Technological Hazards Division
DHS/FEMA Protection and National Preparedness Directorate
1800 South Bell Street, Room 830
Arlington, VA 20598-3025
Office: (202) 212-2334
Mobile: (b)(6)
Fax: (703) 305-0738
james.purvis@dhs.gov

From: Purvis, James
Sent: Friday, March 18, 2011 11:46 PM
To: 'LIA05 Hoc'; 'Ralston, Michelle'; 'Horwitz, Steve'; 'Sherwood, Harry'; 'Simpson, John'; Colman, Steve; Thomson, Rebecca; Hammons, Darrell; Burnside, Conrad; King, William; 'Hammond, Lisa'; McCabe, Ron; Feighert, Dan; Fiore, Craig; 'Rice, John '; Hasemann, Brian; Price, John; 'Kinard, Richard'; Robertson, Larry; 'Hecht, Randall'; Naskrent, Gary; Flowerday, Scott; Calhoun, Nan; Valentine, Norm; 'Echavarria, Richard'; 'Berkey, Johanna'
Cc: Seward, Andrew; 'Greten, Timothy'; Quinn, Vanessa
Subject: Emergency Planning Zones v2.0
Importance: High

Please find attached **Version 2.0** of the EPZ Info/fact sheet that went out earlier today. Again, this may be shared freely both internally and externally.

Version 2.0 now includes listings of relevant reference documents, POC information and DHS/FEMA branding.

Regards,

James H Purvis
Radiological Emergency Preparedness Program
Technological Hazards Division
DHS/FEMA Protection and National Preparedness Directorate
1800 South Bell Street, Room 830
Arlington, VA 20598-3025
Office: (202) 212-2334
Mobile: (b)(6)

Fax: (703) 305-0738
james.purvis@dhs.gov

Weaver, Tonna

From: Ruland, William
Sent: Monday, March 21, 2011 12:15 PM
To: Kammerer, Annie
Subject: RE: Seismic Q&As March 20th 8pm update

Just to make it clear. In my view, the key message that you presented was the NRC has seismic experts who are dealing with this issue. You also got across the point about the ground motion as key. The rest was details that supported your expertise. Given the audience, I thought you did very well, much better than most of us could have done. Thanks!

Bill

From: Kammerer, Annie
Sent: Sunday, March 20, 2011 11:00 PM
To: Kammerer, Annie; Hiland, Patrick; Skeen, David; Case, Michael; RST01 Hoc
Cc: Howe, Allen; Nelson, Robert; Stutzke, Martin; Giitter, Joseph; Rihm, Roger; McDermott, Brian; Hasselberg, Rick; Chokshi, Nilesh; Munson, Clifford; Cook, Christopher; Flanders, Scott; Ross-Lee, MaryJane; Brown, Frederick; Ruland, William; Dudes, Laura; Karas, Rebecca; Ake, Jon; Hogan, Rosemary; Uhle, Jennifer; Marshall, Michael; Uselding, Lara; Randall, John; Allen, Don; Burnell, Scott; Hayden, Elizabeth; Pires, Jose; Graves, Herman; Candra, Hernando; Murphy, Andrew; Sheron, Brian; Dricks, Victor; Warnick, Greg; Reynoso, John; Lantz, Ryan; Markley, Michael; Orders, William; Santiago, Patricia; Snodderly, Michael; Baggett, Steven; Sosa, Belkys; Davis, Roger; Franovich, Mike; Castleman, Patrick; Sharkey, Jeffry; Boska, John; Ma, John; Tegeler, Bret; Patel, Pravin; Shams, Mohamed; Morris, Scott; Brenner, Eliot; Harrington, Holly; Seber, Dogan; Ledford, Joey; Johnson, Michael; Virgilio, Martin; Holahan, Vincent; Bergman, Thomas; Webb, Michael; Manoly, Kamal; Khanna, Meena; Screnci, Diane; Thomas, Eric; Nguyen, Quynh; Meighan, Sean; FOIA Response.hoc Resource; Bensi, Michelle
Subject: Seismic Q&As March 20th 8pm update

All,

Here's today's version. It includes updates on related topics for tomorrow's briefing. Also, some of the sections have been streamlined and some (though not all) of the answers have been updated.

The biggest news from the seismic team's perspective is that starting tomorrow a very bright young risk analyst (Michelle Bensi) who recently joined us from UC Berkeley (my beloved alma mater) will be helping with the compilation of this document. That will allow our team to spend more time cleaning and streamlining it; which inevitably will make it more user friendly...and shorter! Starting with tomorrow's version her name will start to show up on the front.

Best of luck to everyone with the briefing tomorrow!

Annie

From: Kammerer, Annie
Sent: Saturday, March 19, 2011 9:00 AM
To: Kammerer, Annie; Hiland, Patrick; Skeen, David; Case, Michael; RST01 Hoc
Cc: Howe, Allen; Nelson, Robert; Stutzke, Martin; Giitter, Joseph; Rihm, Roger; McDermott, Brian; Hasselberg, Rick; Chokshi, Nilesh; Munson, Clifford; Cook, Christopher; Flanders, Scott; Ross-Lee, MaryJane; Brown, Frederick; Ruland, William; Dudes, Laura; Karas, Rebecca; Ake, Jon; Hogan, Rosemary; Uhle, Jennifer; Marshall, Michael; Uselding, Lara; Randall, John; Allen, Don; Burnell, Scott; Hayden, Elizabeth; Pires, Jose; Graves, Herman; Candra, Hernando; Murphy, Andrew; Sheron, Brian; Dricks, Victor; Warnick, Greg; Reynoso, John; Lantz, Ryan; Markley, Michael; Orders, William; Santiago, Patricia; Snodderly, Michael; Baggett, Steven; Sosa, Belkys; Davis, Roger; Franovich, Mike; Castleman, Patrick; Sharkey, Jeffry; Boska, John; Ma, John; Tegeler, Bret; Patel, Pravin; Shams, Mohamed; Morris, Scott; Brenner, Eliot; Harrington, Holly; Seber, Dogan; Ledford, Joey; Johnson, Michael; Virgilio, Martin; Holahan, Vincent; Bergman, Thomas;

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Webb, Michael; Manoly, Kamal; Khanna, Meena; Screnci, Diane; Thomas, Eric; Nguyen, Quynh; Meighan, Sean; FOIAResource.hoc@nrc.gov
Subject: Seismic Q&As March 19th 8am update

All,

Here is today's updated version. Lot of new fact sheets have been prepared for various briefings and for Monday's public meeting!

However, the big news of the day is that we just sent off a 6 page, 22 question, much better edited version for a public Q&A set. It's all in OPA's capable hands now. I think it's pretty good...but then I'm biased.

Cheers,
Annie

From: Kammerer, Annie
Sent: Friday, March 18, 2011 6:51 AM
To: Kammerer, Annie; Hiland, Patrick; Skeen, David; Case, Michael; RST01 Hoc
Cc: Howe, Allen; Nelson, Robert; Stutzke, Martin; Giitter, Joseph; Rihm, Roger; McDermott, Brian; Hasselberg, Rick; Chokshi, Nilesh; Munson, Clifford; Cook, Christopher; Flanders, Scott; Ross-Lee, MaryJane; Brown, Frederick; Ruland, William; Dudes, Laura; Karas, Rebecca; Ake, Jon; Hogan, Rosemary; Uhle, Jennifer; Marshall, Michael; Uselding, Lara; Randall, John; Allen, Don; Burnell, Scott; Hayden, Elizabeth; Pires, Jose; Graves, Herman; Candra, Hernando; Murphy, Andrew; Sheron, Brian; Dricks, Victor; Warnick, Greg; Reynoso, John; Lantz, Ryan; Markley, Michael; Orders, William; Santiago, Patricia; Snodderly, Michael; Baggett, Steven; Sosa, Belkys; Davis, Roger; Franovich, Mike; Castleman, Patrick; Sharkey, Jeffry; Boska, John; Ma, John; Tegeler, Bret; Patel, Pravin; Shams, Mohamed; Morris, Scott; Brenner, Eliot; Harrington, Holly; Seber, Dogan; Ledford, Joey; Johnson, Michael; Virgilio, Martin; Holahan, Vincent; Bergman, Thomas; Webb, Michael; Manoly, Kamal; Khanna, Meena; Screnci, Diane; Thomas, Eric; Nguyen, Quynh; Meighan, Sean
Subject: RE: Seismic Q&As March 18th 5am update

All,

Please see the updated version of the Seismic Q&As.

Among today's highlights:
*We added a Terms and Definitions section at the end of the document. (We know that an acronyms list would be helpful too, but it will have to wait a little)
*The "additional information" section has been split into tables, plots, and fact sheets
*A high-level draft fact sheet on NRC's seismic regulations has been added
*We added a section to track outstanding questions that have come in from congress. This will support those who get the tickets in the short terms (most likely NRR). The questions will be moved to the appropriate sections long term (as long as they are not duplicates.)

I'm sure we all agree this has been a crazy week!. We're hoping that the weekend workload is lighter (if only because we won't get as many email from in house) and we can clean up this document and fill in some of the missing answers in preparation for the news story changing. We're trying hard to get out in front of the next wave.

Cheers,
Annie

From: Kammerer, Annie
Sent: Thursday, March 17, 2011 2:36 AM
To: Kammerer, Annie; Hiland, Patrick; Skeen, David; Case, Michael; RST01 Hoc
Cc: Howe, Allen; Nelson, Robert; Stutzke, Martin; Giitter, Joseph; Rihm, Roger; McDermott, Brian; Hasselberg, Rick; Chokshi, Nilesh; Munson, Clifford; Cook, Christopher; Flanders, Scott; Ross-Lee, MaryJane; Brown, Frederick; Giitter, Joseph; Howe, Allen; Ruland, William; Dudes, Laura; Karas, Rebecca; Ake, Jon; Munson, Clifford; Hogan, Rosemary; Uhle, Jennifer; Marshall, Michael; Uselding, Lara; Randall, John; Allen, Don; Burnell, Scott; Hayden, Elizabeth; Pires, Jose;

Graves, Herman; Candra, Hernando; Murphy, Andrew; Murphy, Andrew; Pires, Jose; Hogan, Rosemary; Sheron, Brian; Dricks, Victor; Warnick, Greg; Reynoso, John; Lantz, Ryan; Markley, Michael; Orders, William; Santiago, Patricia; Snodderly, Michael; Baggett, Steven; Sosa, Belkys; Davis, Roger; Franovich, Mike; Castleman, Patrick; Sharkey, Jeffry; Boska, John; Ma, John; Tegeler, Bret; Patel, Pravin; Shams, Mohamed; Morris, Scott; Brenner, Eliot; Harrington, Holly; Seber, Dogan; Ledford, Joey; Johnson, Michael; Virgilio, Martin; Holahan, Vincent; Bergman, Thomas
Subject: Seismic Q&As March 17th 2am update

All,

As promised, a sharepoint site has been set up where our friends in NRR will be posting the latest version of the Seismic Q&A document on an ongoing basis. If someone would prefer to use the sharepoint site, instead of being on this distribution list, please let me know...
http://portal.nrc.gov/edo/nrr/NRR%20TA/FAQ%20Related%20to%20Events%20Occuring%20in%20Japan/Forms/AllItems.aspx

This latest update has a number of new questions (not many with answers today, but we are working hard). A high priority question we are working on is "how many plants are near a mapped active fault". We're focusing on anything within 50 miles. We're also pulling relevant questions from the congressional inquiries we just received; and will also give these high priority to support any needs by NRR.

Many new figures and some draft fact sheets have added to the "additional information" section. These include the NRO half of a tsunami fact sheet...a description of the tsunami research is still to come from RES.

Some good news: Yesterday's version seems to have been widely forwarded around the agency. So, we are also starting to get some excellent questions from staff looking forward. This is allowing us to feel that we are finally getting out in front of things to a small degree. Also, our team has grown and we now have someone acting as source of seismic expertise for the 11pm to 7 am shift. This means that we now have seismic experts available to the RST and OPA at the Op Center 24 hours, with 2 people during the day. That extra support is allowing us to get this out at least an hour earlier today ☺

We are continuing to compile the questions that come in and update the seismic Q&A document. If you have suggested changes, or want to provide missing answers, please forward them to me for compilation.

This is a living document and will be updated daily in the foreseeable future.

Happy St. Paddy's Day. May the world (especially our friends in Japan) have the luck of the Irish today.

Cheers,
Annie

Dr. Annie Kammerer, PE
Senior Seismologist and Earthquake Engineer
US Nuclear Regulatory Commission
Office of Nuclear Regulatory Research
Washington DC 20555
(b)(6) mobile
BB

From: Kammerer, Annie
Sent: Tuesday, March 15, 2011 3:41 AM
To: Hiland, Patrick; Skeen, David
Cc: Howe, Allen; Nelson, Robert; Stutzke, Martin; Giitter, Joseph; Rihm, Roger; McDermott, Brian; Hasselberg, Rick; Kammerer, Annie; Chokshi, Nilesh; Munson, Clifford; Cook, Christopher; Flanders, Scott; Ross-Lee, MaryJane; Brown,

Frederick; Giitter, Joseph; Howe, Allen; Case, Michael; Ruland, William; Dudes, Laura; Karas, Rebecca; Ake, Jon; Munson, Clifford; Hogan, Rosemary; Uhle, Jennifer; Marshall, Michael; Uselding, Lara; Randall, John; Allen, Don; Burnell, Scott; Hayden, Elizabeth; Pires, Jose; Graves, Herman; Candra, Hernando; Murphy, Andrew; Murphy, Andrew; Pires, Jose; Hogan, Rosemary; Sheron, Brian; Dricks, Victor; Warnick, Greg; Reynoso, John; Lantz, Ryan; Markley, Michael
Subject: latest version of Q&As

All,

This is the first draft of the seismic-specific Q&As. It is pretty rough and there are many answers still missing, but people have contributed a lot and we thought it may be useful for many people trying to answer questions coming in.

We are continuing to compile the questions that come in and update the seismic Q&A document. If you have suggested changes, or want to provide missing answers, please forward them to me for compilation.

This is a living document and will be updated daily in the foreseeable future.

Annie

Dr. Annie Kammerer, PE
Senior Seismologist and Earthquake Engineer
US Nuclear Regulatory Commission
Office of Nuclear Regulatory Research
Washington DC 20555
(b)(6) mobile
BB

Weaver, Tonna

From: Ward, Leonard
Sent: Monday, March 21, 2011 2:25 PM
To: Mendiola, Anthony
Subject: FW: Berkeley NE Dept says Zr can't burn in air or H_2O and joins Nils Diaz in saying graphite burns like coal

The RCS was saturated with H_2 after the event....it made cooldown of the RCS most difficult; it was vented thru the presurizer through many fill and drains!!1 Len

Dr. Leonard W. Ward, PhD
US Nuclear Regulatory Commission
NRR/DSS/SNPB
MS O10-B3
Washington DC 20555-001
Work (301) 415-2866
Fax (301) 415-3577

From: Carlson, Donald
Sent: Monday, March 21, 2011 11:56 AM
To: Srinivasan, Makuteswara; Ward, Leonard; burchelltd@ornl.gov
Subject: Berkeley NE Dept says Zr can't burn in air or H_2O and joins Nils Diaz in saying graphite burns like coal

Srini, Tim, and Len:

As you may have noticed, Rod Adams' stridently pro-nuclear Atomic Insights blog has been getting some attention for criticizing NRC's response to Fukushima Daiichi (see March 17 blog).

But Adams doesn't stop there. He dismisses in-core energetic zirconium-water reactions as a likely source of exploding hydrogen, insists that spent fuel fires are impossible, and even finds support for these views in a very recent local TV news report. The news report features professors at the UC-Berkeley Nuclear Engineering Department claiming that (a) zirconium cannot burn in air or water and (b) graphite is essentially coal (see March 20 blog). With regard to graphite burning like coal, Nils Diaz said the same on CNN last week in reference to Chernobyl.

If Rod Adams and UC-Berkeley are right about zirconium, then this would seem to be a historic new insight worthy of the highest praise. Our understanding of TMI would have to be revised along with many NE textbooks. Or maybe they're wrong. What do you think, Len?

UC-Berkeley's blowtorch demo on zirconium tubing is similar to some of the torch demos on nuclear graphite we've seen where the graphite emerges unscathed. It would be interesting to see such a demo on coal.

My own limited understanding of what happened with the Chernobyl graphite after the explosive core reactivity excursion is as follows:

A considerable amount of graphite does indeed seem to have oxidized or "burned" after the explosion. A former Chernobyl worker (Vladimir Khotylev, since employed by the CNSC in Ottawa) told me several years ago that much of the graphite is no longer there, presumably having been oxidized (to CO or CO_2). But Chernobyl was water cooled. Furthermore, given its use of robust zircalloy pressure tubes as well as zircalloy fuel cladding, Chernobyl had much more zirconium than any conventional LWR. So it seems likely that lots of ultra-hot zirconium burned in the air and residual steam after the Chernobyl explosion. The hot zirconium fires then played a significant role in promoting exothermic air

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oxidation of graphite. Without the energetic zirc-water and zirc-air reactions, it seems likely that much less graphite would have "burned" at Chernobyl.

Similarly for the 1957 Windscale accident, very little graphite would have burned there had it not been for combustion of the metallic fuel elements (and some say secret lithium targets) as a result of Wigner-energy overheating of the air-cooled graphite core.

Graphite "burning" or oxidation is of course being analyzed for postulated severe air-ingress accidents in proposed modular HTGR designs like NGNP and PBMR. With the metal-free all-ceramic cores that define HTGRs, it seems that any comparison of graphite to coal is especially unwarranted.

What do you think, Srini, Tim, and Len?

Best regards,
Don

Dr.-Ing. Donald E. Carlson
Senior Project Manager
NRO/ARP/ARB1
Office: 301-415-0109
Cell: (b)(6)
T6-F6/MS T6-E4

Weaver, Tonna

From: Ryan, Michelle
Sent: Monday, March 21, 2011 5:59 PM
To: Leeds, Eric; Virgilio, Rosetta
Cc: Meighan, Sean; Schwarz, Sherry; Turtil, Richard; Rivera, Alison; Grobe, Jack; Ruland, William; Boger, Bruce; Ellmers, Glenn
Subject: RE: NRC PUBLIC MEETING 9:00 AM MONDAY, MARCH 21, 2011: NRC's RESPONSE TO RECENT NUCLEAR EVENTS IN JAPAN

Eric,
The NGA website indicates that the following regarding the upcoming April Policy Institute:
The Policy Institute is exclusively for **senior energy advisors and/or policy directors** and will focus on concrete strategies for how to advance energy solutions that reduce costs, promote economic development and address environmental goals.

We will follow-up with NGA regarding the use of slides and time dedicated to Q &A.

Thanks
Michelle

Michelle Ryan
Federal, State, and Tribal Liaison Project Manager, USNRC
Division of Intergovernmental Liaison and Rulemaking (DILR)
Intergovernmental Liaison Branch (ILB)
Michelle.Ryan@nrc.gov
Phone: (301) 415-1071

From: Leeds, Eric
Sent: Monday, March 21, 2011 5:46 PM
To: Virgilio, Rosetta
Cc: Meighan, Sean; Schwarz, Sherry; Turtil, Richard; Ryan, Michelle; Rivera, Alison; Grobe, Jack; Ruland, William; Boger, Bruce; Ellmers, Glenn
Subject: RE: NRC PUBLIC MEETING 9:00 AM MONDAY, MARCH 21, 2011: NRC's RESPONSE TO RECENT NUCLEAR EVENTS IN JAPAN

Thanks Rosetta! I'll need your help to better define the audience for me – who are these folks, how technical, any nuclear background, etc. I saw I have 10 to 15 minutes to present? And then I guess I can questions? That's fine, I just want to try to nail it down.

Can I use slides/pictures like Bill B. did for the staff on Friday? His presentation was well received by the staff.

Eric J. Leeds, Director
Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
301-415-1270

From: Virgilio, Rosetta
Sent: Monday, March 21, 2011 5:29 PM
To: Leeds, Eric
Cc: Meighan, Sean; Schwarz, Sherry; Turtil, Richard; Ryan, Michelle; Rivera, Alison

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Subject: Fw: NRC PUBLIC MEETING 9:00 AM MONDAY, MARCH 21, 2011: NRC's RESPONSE TO RECENT NUCLEAR EVENTS IN JAPAN

Eric - Please see below and attached relative to the National Governors' Association invitation to NRC to participate in an April 4, panel presentation before Governor Energy Advisors in Crystal City from 1:45-4:15 pm. The panel session is entitled Energy Technology 101; NGA is interested in hearing about the event in Japan and the implications for US plants.

Sherry Schwarz has put this appointment on your calendar.

I will be happy to work with you and your staff on this.

Rosetta

Sent from an NRC Blackberry
Rosetta O. Virgilio
(b)(6)

From: Dierkers, Gregory <gdierkers@NGA.ORG>
To: Virgilio, Rosetta
Sent: Mon Mar 21 16:14:15 2011
Subject: RE: NRC PUBLIC MEETING 9:00 AM MONDAY, MARCH 21, 2011: NRC's RESPONSE TO RECENT NUCLEAR EVENTS IN JAPAN

Thank you Rosetta. Attached is the agenda for the April 4th meeting. We would look for a technical expert to join us on a panel at 1:45pm to 4:15pm on April 4th in Crystal City.

Please let me know if I can be of further assistance.

Greg Dierkers
Program Director – Energy and Transportation
NGA Center for Best Practices
Environment, Energy and Transportation Division
202-624-7789
gdierkers@nga.org

From: Virgilio, Rosetta [mailto:Rosetta.Virgilio@nrc.gov]
Sent: Monday, March 21, 2011 4:07 PM
To: Dierkers, Gregory
Subject: NRC PUBLIC MEETING 9:00 AM MONDAY, MARCH 21, 2011: NRC's RESPONSE TO RECENT NUCLEAR EVENTS IN JAPAN

Hi, Greg: I apologize for the late notice, but our staff indicate they are unable to support a meeting this week, but would make time available for the April 4 meeting. Please do keep me posted about those details.

I am not currently in the office (headed to NC for a funeral) but am monitoring my email.

Rosetta Virgilio

Sent from an NRC Blackberry
Rosetta O. Virgilio
(b)(6)

From: Dierkers, Gregory <gdierkers@NGA.ORG>
To: Virgilio, Rosetta
Sent: Mon Mar 21 12:22:27 2011
Subject: RE: NRC PUBLIC MEETING 9:00 AM MONDAY, MARCH 21, 2011: NRC's RESPONSE TO RECENT NUCLEAR EVENTS IN JAPAN

Let me check but I think we are flexible pending your availability.

Greg

From: Virgilio, Rosetta [mailto:Rosetta.Virgilio@nrc.gov]
Sent: Sunday, March 20, 2011 12:43 PM
To: Dierkers, Gregory
Subject: Re: NRC PUBLIC MEETING 9:00 AM MONDAY, MARCH 21, 2011: NRC's RESPONSE TO RECENT NUCLEAR EVENTS IN JAPAN

Hello, Greg - Do you have any more detail regarding 3/22 or 3/23 meeting , i.e., date/ time of day?

Sent from an NRC Blackberry
Rosetta O. Virgilio
(b)(6)

From: Virgilio, Rosetta
To: gdierkers@nga.org <gdierkers@nga.org>
Sent: Fri Mar 18 15:13:22 2011
Subject: NRC PUBLIC MEETING 9:00 AM MONDAY, MARCH 21, 2011: NRC's RESPONSE TO RECENT NUCLEAR EVENTS IN JAPAN

Hello, Greg – Just wanted to touch base and let you know that things are not looking good for NRC participation in next week's NGA webinar; however, I am pursuing the April 4 date, which may be more doable.

As I indicated yesterday, the NRC staff will brief the Commission Monday, March 21, 2011, at 9:00 a.m. regarding NRC's response to recent nuclear events in Japan. The meeting is public and will be held at NRC Headquarters at 11555 Rockville Pike, Commissioners' Conference Room, in Rockville, Maryland.

The meeting can also be viewed via Webcast at: http://www.nrc.gov/public-involve/public-meetings/webcast-live.html

Please feel free to share this information with your contacts.

Rosetta O. Virgilio
Senior Liaison Project Manager
Intergovernmental Liaison Branch
U.S. Nuclear Regulatory Commission
11545 Rockville Pike - T-8F42
Rockville, MD 20852-2738
301-415-2367
Rosetta.Virgilio@nrc.gov

From: Virgilio, Rosetta
To: 'gdierkers@NGA.ORG' <gdierkers@NGA.ORG>
Sent: Thu Mar 17 17:03:28 2011
Subject: Re: NGA Center NRC expert speaker requests

Thank you, Greg; I will followup and get back to you.

Sent from an NRC Blackberry
Rosetta O. Virgilio
(b)(6)

From: Dierkers, Gregory <gdierkers@NGA.ORG>
To: Virgilio, Rosetta
Cc: Gander, Sue <sgander@NGA.ORG>; MacLellan, Thomas <TMaclellan@NGA.ORG>; Ferro, Carmen <CFerro@NGA.ORG>
Sent: Thu Mar 17 16:36:04 2011
Subject: NGA Center NRC expert speaker requests

Hi Rosetta,

Thanks for your time today. We appreciate you identifying someone from the NRC to support the NGA Center's outreach to states during this busy time.

As we discussed we would like to invite the NRC to join us for **two upcoming events -- a webinar next week and a conference in early April -- to brief governors' advisors on the Japanese situation and the implications for US plants.** The events are:

1) **A webinar with governors' security and energy advisors.** NGA Center staff is planning to host a conference call next week (Tuesday 3/21 or Wednesday 3/22) to provide senior state officials with an update on the Japan situation and to answer questions as to the operations of US plants, including regulations, plant security/safety, and the emergency preparedness efforts at the US nuclear fleet. <u>We would ask that an NRC expert join the webinar remotely; the webinar would last for 1 hour.</u>

2) **An in-person speaker at a governors' energy advisors meeting.** NGA Center's *Governors' Energy Advisors Policy Institute* on April 4th in Arlington, Virginia. The focus of the April 4th Institute is to provide a 'Technology 101' briefing for governors senior energy advisors. <u>We would invite the NRC to attend in-person on April 4th from 1:45pm to 4:15pm. We would ask for a 10-15 minute presentation on the situation in Japan, the state of nuclear technology and regulations in the US, and the implications for states from the Japanese crisis. Attached is a draft agenda.</u>

Thanks for considering both of these requests.

Sincerely,

Greg Dierkers
Program Director – Energy and Transportation
NGA Center for Best Practices
Environment, Energy and Transportation Division
202-624-7789
gdierkers@nga.org

Sturzebecher, Karl

From:	Birla, Sushil
Sent:	Monday, March 21, 2011 1:46 PM
To:	Sydnor, Russell; Arndt, Steven; Wilson, George; Stattel, Richard
Cc:	Sturzebecher, Karl; Betancourt, Luis; Burton, Thomas; Halverson, Derek; Prokofiev, Iouri
Subject:	FW: Do you know if somebody will review the 2011 seismic I&C data in Japan?
Attachments:	0709-e.pdf

Russ, Steve, Rich, George:
I am forwarding a question from Iouri Prokofiev of RES, leading a long term research project (V6060) in which Task 2 is related to seismic instrumentation and automatic scram sensors. He sees an opportunity to learn from the seismic event in Japan, concerning the seismic sensors and the signals obtained from these sensors.

Sushil Birla (phonetically Su-sheel)
Senior Technical Advisor - Digital Instrumentation and Control
Office of Nuclear Regulatory Research, Mail Stop C5-A24M
U.S. Nuclear Regulatory Commission
21 Church Street, Rockville, MD 20850, USA
Phone: 301-251-7660
Mobile: (b)(6)
Fax: 301-251-7425
Email address: Sushil.Birla@nrc.gov
Postal address: Mail Stop C5-A24M, Washington DC 20555-0001
It's time to meet: http://www.internal.nrc.gov/news/nrcreporter/2010/profiles/Sushil-Birla.html

From: Prokofiev, Iouri
Sent: Monday, March 21, 2011 1:17 PM
To: Csontos, Aladar; Birla, Sushil
Cc: Tregoning, Robert; Rivera-Lugo, Richard
Subject: RE: RESPONSE TO THE EVENTS IN JAPAN

Dear Al and Sushil,

I am working with info related to seismic instrumentation and automatic scram sensors for Task 2 of our LTRP V6060.

I know that according to IAEA data, the main shock of the Niigataken Chuetsu-oki earthquake was registered only with the newly (April 2007) installed seismic instruments. The records from the original seismic instruments were overwritten due to saturation of memory capacity, therefore, only maximum values are available from these. The seismic sensors for triggering the automatic scram of the reactors are part of the safety systems of the plant. They do not provide time histories.

Do you know if somebody will review the 2011 seismic I&C data in Japan?

If you need more information about TEPCO 2007 experience with BWR, please let me know. The attached presentation contains an analog BWR situation, the September 2007 TEPCO status report. TEPCO was lucky then because there was no tsunami and there was no SBO.

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Impact of the Niigata Chuestu-oki Earthquake on the Tokyo Electric Power Company (TEPCO) Kashiwazaki-Kariwa Nuclear Power Station and Countermeasures

September 2007

The Tokyo Electric Power Company, Inc.

TEPCO 東京電力

1. Status of the Kashiwazaki-Kariwa Nuclear Power Station

- Units 2,3,4, and 7 automatically shutdown when the earthquake occurred. All 7 units, with a total capacity of 8210 MW, are in a stable shutdown condition.
- Upon inspection, no damage to components of high safety significance was detected. Damage mainly occurred to facilities with low seismic safety significance.
- 2,555 non-conformances were confirmed upon inspection, including the following 10 incidents subject to reporting according to decrees and safety agreements as of August 30th :
  - Leakage of water including radioactive material at Unit 6 (1 incident)
  - Water spillage from the spent fuel pool onto the floor at Units 1 – 7 (7 incidents)
  - House Transformer fire at Unit 3 (1 incident)
  - Drive Axis Coupling breakage of the Unit 6 ceiling crane (1 incident)
- Visual inspection has been completed and an in-depth investigation is now in progress. In-core inspection of unit 1 started from August 21st.
- No change has been observed in the monitoring post data since the occurrence of the earthquake; hence no radiation effect to the environment

2. Earthquake-related Issues (1)

[Unit 3 House Transformer Fire]

[Time Line]

July 16

10:13 Earthquake occurs

10:15 Post-earthquake plant walk-down discovers the fire. Initial efforts to extinguish the fire (4 people).

10:27 Shift supervisor contacts the fire department but was asked to use in-house self defense fire brigade.

11:23 Shift supervisor contacts the fire department again.

11:27 The fire department enters the Kashiwazaki-Kariwa NPS.

12:10 Fire is extinguished.

Water could not be sprayed from the fire hydrant due to pipe breakage.

Since oil fire was suspected and difficult to extinguish with water, the workers retreated to a safe area, reported to the emergency H/Q and waited for the arrival of the fire department.

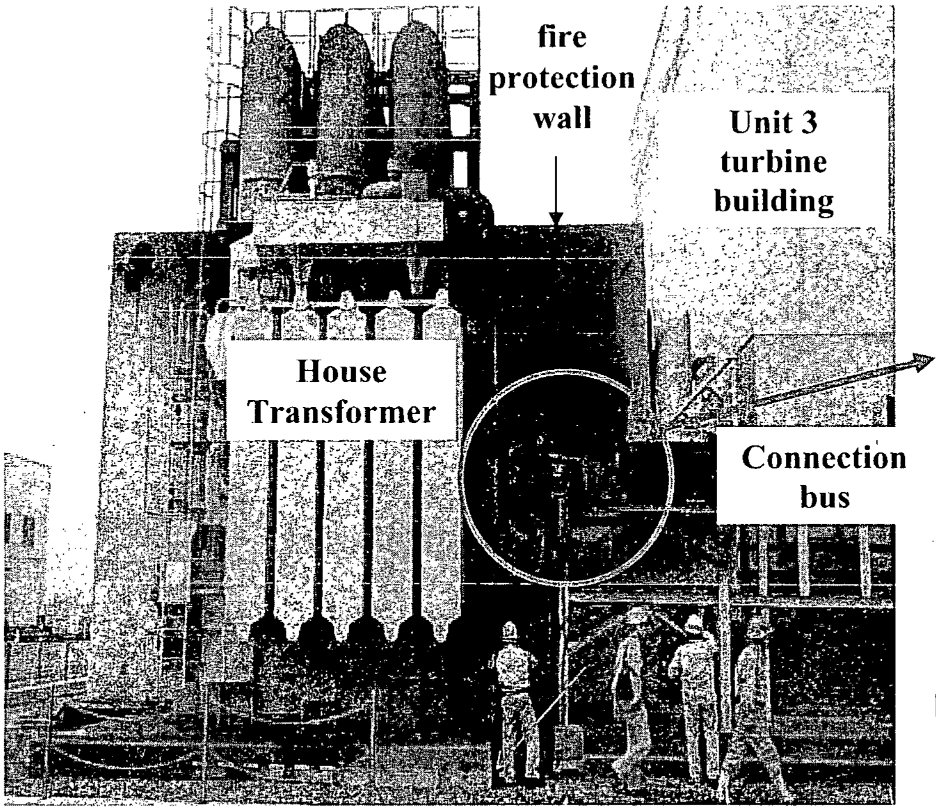
[Status of Damage & Causes]

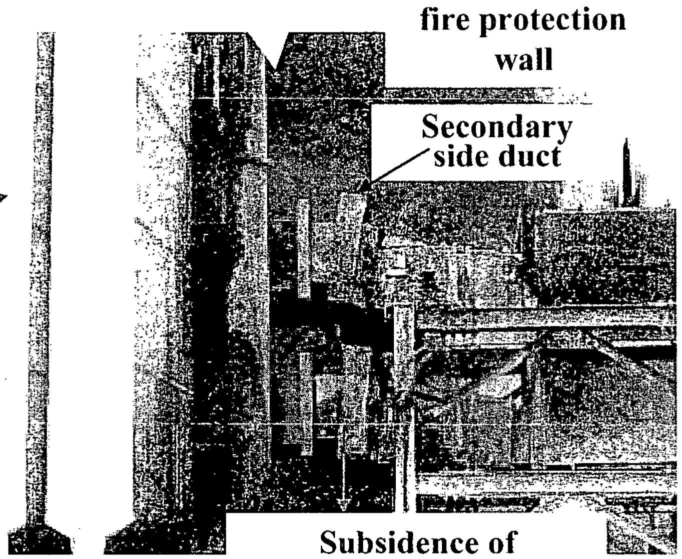
- The fire protection wall prevented the fire from spreading to other areas.
- Soil deformation is presumed to have caused a short circuit. An in-depth investigation is in progress.

2. Earthquake-related Issues (1)

[Unit 3 House Transformer Fire]

Subsidence of the connection bus of the secondary side of the transformer relative to the transformer itself.





2. Earthquake-related Issues (2)

[Release of Radioactive Material into the Sea from Water Leakage at Unit 6]

[Time Line]

July 16

12:50 Identification of water puddles in the non-controlled area of the reactor building.

18:20 Small amount of radioactivity in the puddles confirmed.

20:10 Leakage of radioactive water into the sea via the water discharge outlet confirmed.

21:45 Press release.

Since the water puddle was in the non-controlled area with an amount below reporting level, it was initially considered unnecessary to report to the authority. Afterwards, a sample was taken to detect radioactivity.

Discharge was confirmed by checking possible discharge routes, operational history of the pump, and sampling and measurement of the water tank.

Discharged water: **$1.2m^3$**

Amount of Radioactivity: **9×10^4** Bq

Radiation Dose from the above radioactivity: 2×10^{-9} mSv

(1/1,000,000,000 of the radiation an average person is exposed to from natural sources annually.)

[Cause]

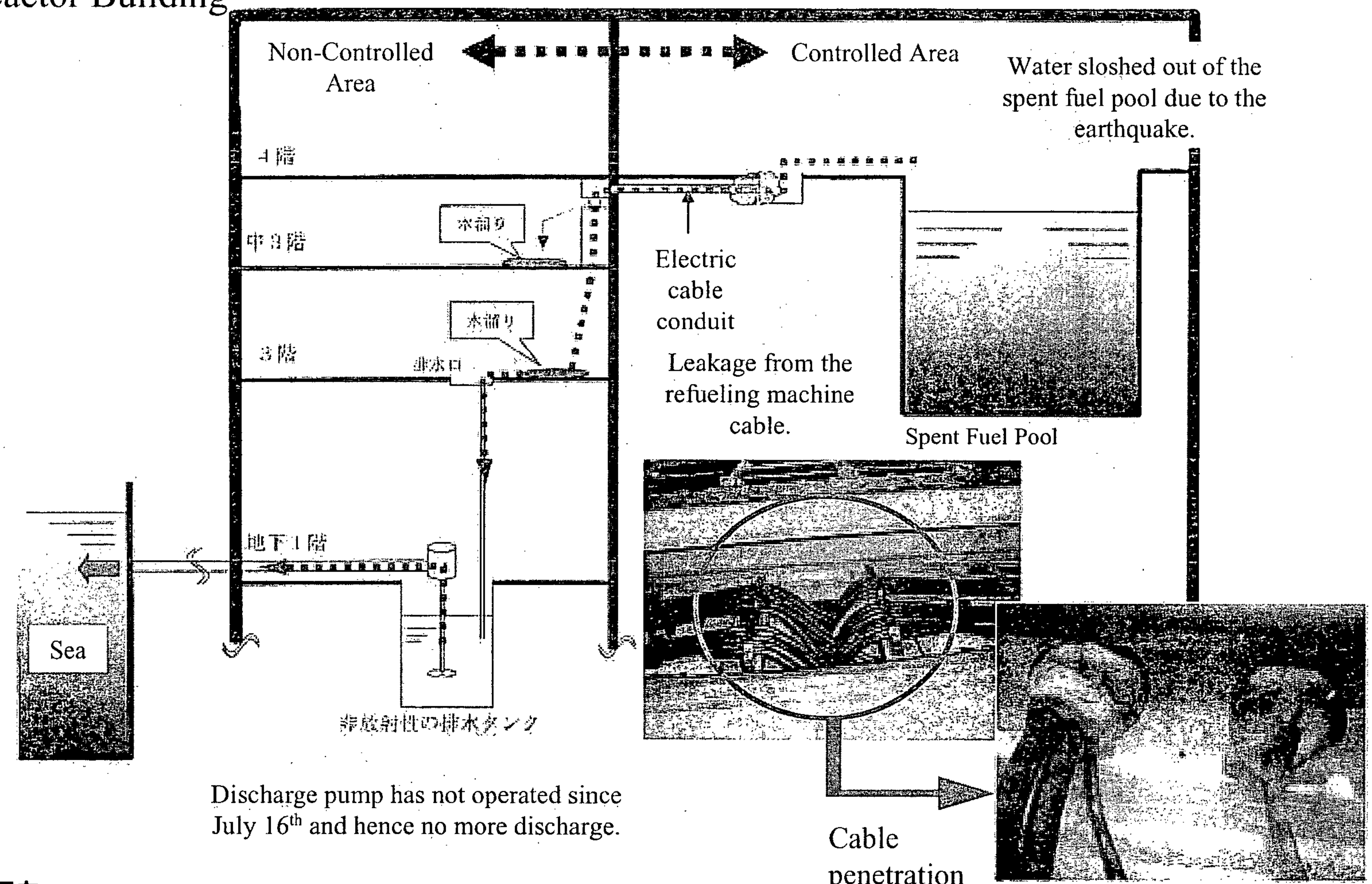
- It is presumed that water sloshed onto the floor from the spent fuel pool and flowed along the electric cable conduit to the non-controlled area.

(There are currently no leaks).

2. Earthquake-related Issues (2)

[Release of Radioactive Material into the Sea from Water Leakage at Unit 6]

Unit 6 Reactor Building



Discharge pump has not operated since July 16th and hence no more discharge.

2. Earthquake-related Issues (3)

[Radioactive Materials Detected from the Unit 7 Main Stack Monitor]

[Time Line]

July 17

13:00 Iodine and radioactive particulate material (Cr-51, Co-60) were detected during weekly periodic measurement of the main exhaust stack.

16:00 Press release.

Total radioactivity: 4×10^8 Bq

Radiation Dose from the above radioactivity: 2×10^{-7} mSv

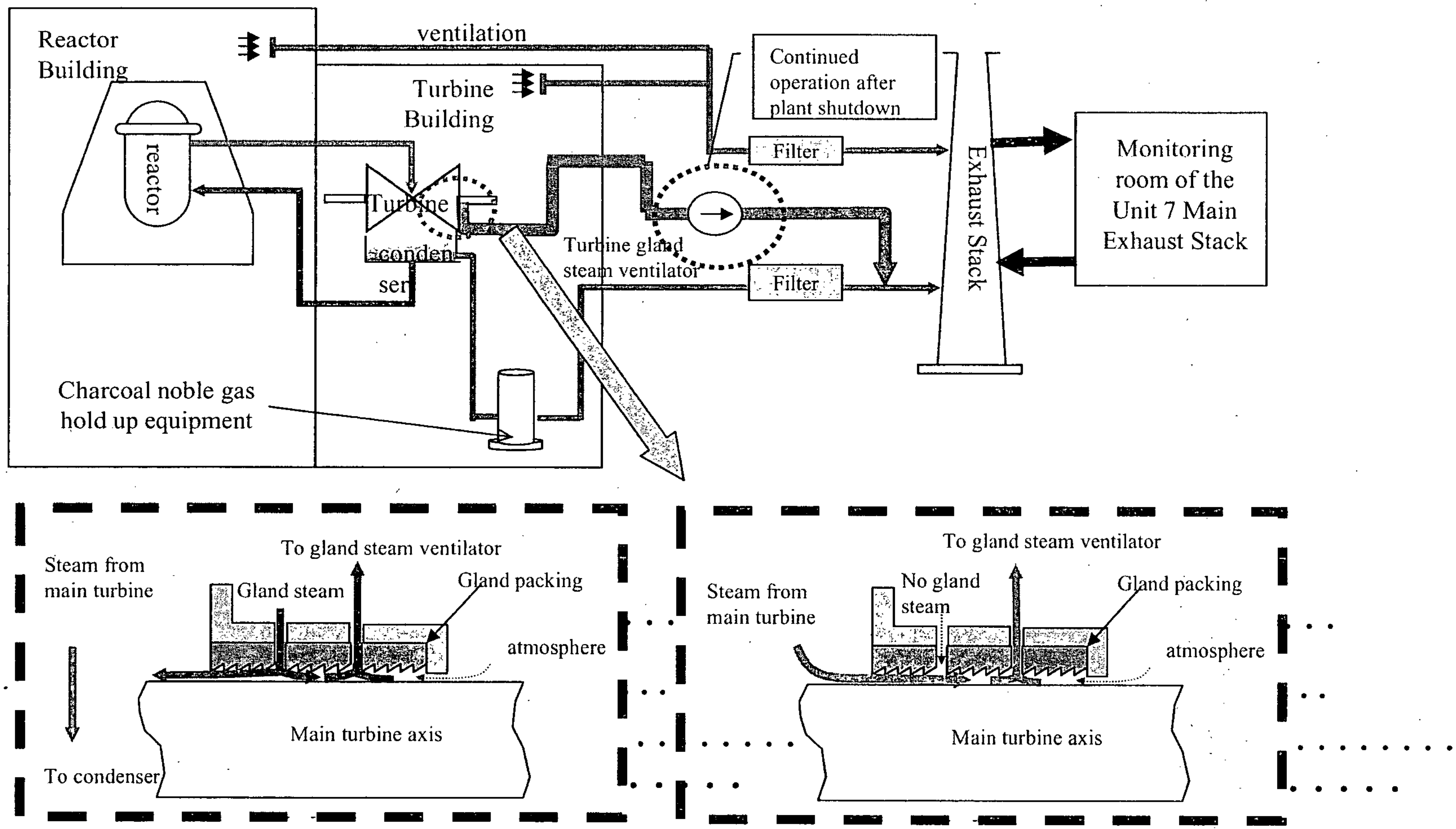
(1/10,000,000 of the radiation an average person is exposed to from natural sources annually.)

[Cause]

- It is presumed that radioactive materials were sucked out from the condenser and subsequently released from the main stack due to the delay in shutting down the gland steam ventilator after automatic shutdown of the reactor.
- No radioactive material has been detected in measurements after July 19.

2. Earthquake-related Issues (3)

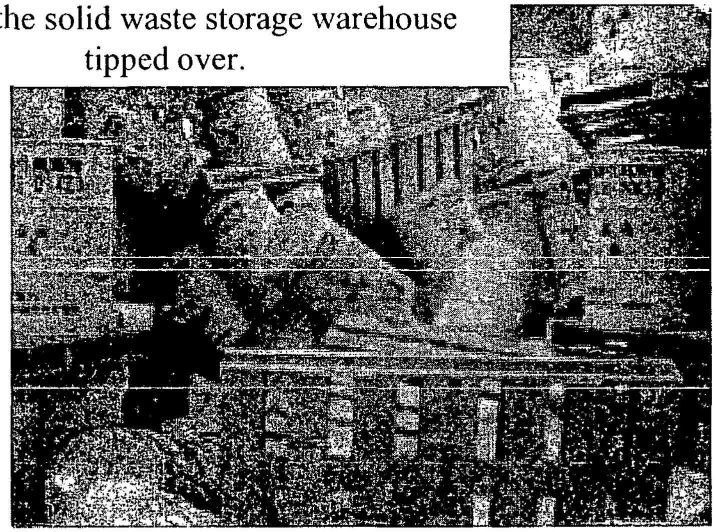
[Radioactive Materials Detected from the Unit 7 Main Stack Monitor]



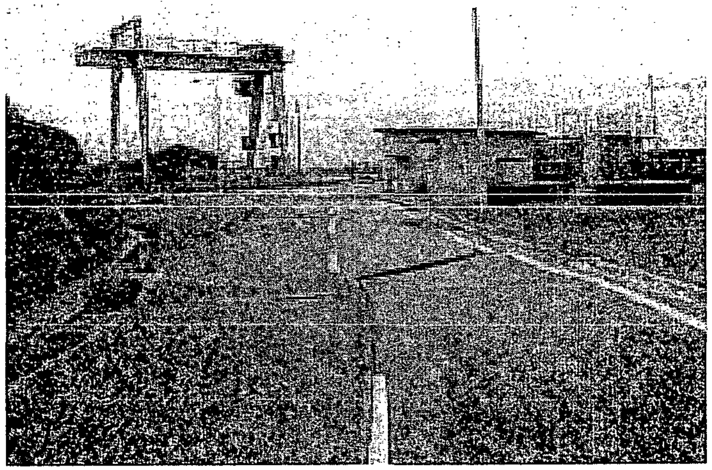
Normal Operation **Situation After the Quake**

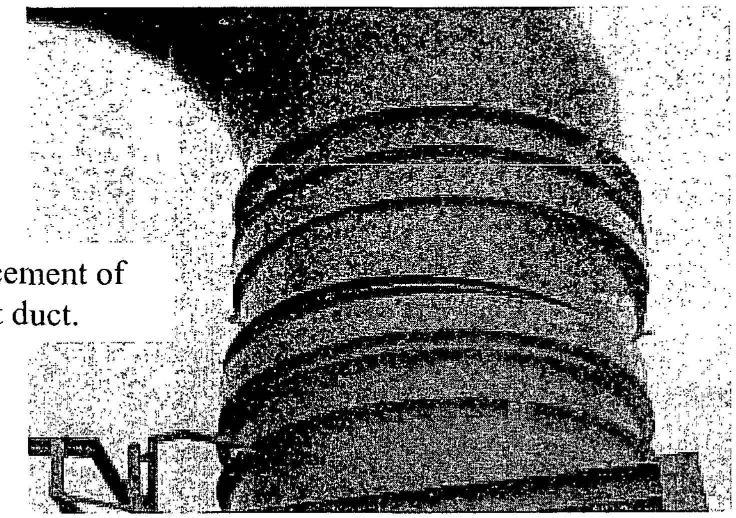
3. Status of Other Generation Facilities

Several hundred drums containing low-level waste in the solid waste storage warehouse tipped over.

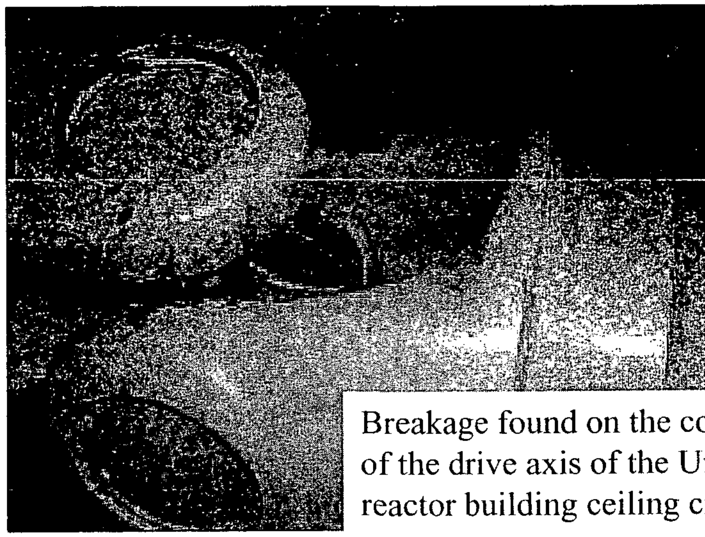


Access road in the site. (Close to the Unit 5 water discharge outlet.)





Displacement of exhaust duct.



Breakage found on the coupling of the drive axis of the Unit 6 reactor building ceiling crane.

4. Improvement Issues

Based on METI's order on July 20, an improvement plan was submitted on July 26.

Reinforcement of the Self-Defence Fire Brigade

- Establish a 24-hour fire-fighting crew.
- Deploy a chemical fire engine.
- Secure an exclusive communication line with the fire department.

Chemical Fire Engine & Technical Specialists

Establish a prompt and accurate accident reporting system

- Set-up a radiation measurement organization for nights and holidays.
- Enhance the emergency support center including securing reliable communication facilities.
- Report the possibility of radioactive material leakage at the time confirmed.

5. Provision of Information to the Local Community

[Correspondence with the Media]

- Press release made daily on the status of the NPS since the earthquake occurred (about 80 times).
- Press conferences with the Superintendent of the NPS. (7/20, 8/2, 8/10)
- NPS opened to the Press. (7/21, 7/25, 7/28, 8/15, 8/28)

[Transmission of Information to Local Residents]

- Newspaper ad on apology by the TEPCO president and update on the status of the NPS.(7/24, 7/27, 8/10)
- Multiple daily radio broadcasts regarding the status of the NPS.
- Distribution of newspaper inserts (7/26, 8/2, 8/9, 8/14, 8/23, 8/24, 8/30 roughly 39,000 copies).
  - TEPCO employees had distributed to 60 Kashiwazaki-Kariwa evacuation centers.
- From July 16, TEPCO employees paid explanatory visits to over 950 people such as local politicians, the Fisheries Cooperative, Chamber of Commerce and Industry, and heads of local communities.
- Earthquake information was consolidated and posted on the company website.
- Posting of apology by the Superintendent of NPS and plant status at the TEPCO Public Relations center.

6. Next Actions (1)

[Inspection & Restoration]

- Upon visual inspection on major components, no significant damage was detected.
- In-depth investigation on the structural soundness of equipments is now in progress.
- With ongoing in-depth investigation, damaged facilities would be restored in series.
  - Analytical verification and in-depth investigation by experts would be done on the components of high safety significance.
  - In-core inspection of upper part of the unit 1 reactor completed on August 23rd. No damage was found.

Inspection Schedule of Unit 1

System/Equipment		Items	Aug 26 to Sept 1	Sept 2 to Sept 8	Sept 9 to Sept 15	Sept 16 to Sept 22	Status of Inspection/Restoration
Unit 1	Open Inspection of Reactors	Reactor building ceiling crane inspection					[illegible]
		Refueling machine inspection					[illegible]
		Refueling floor service tools inspection (working dolly, stud tensioners, etc.)					[illegible]
		Incore inspection (Phase2)					[illegible]
	Open Inspection of Turbines	Turbine building ceiling crane inspection					[illegible]
	Restoration and Inspection of Equipments	Main exhaust ducts inspection	Preparation			Inspection	[illegible]
		Reactor combination building B5F level leakage water disposal					[illegible]
		Main transformers inspection	Visual inspection		Oil Extraction & Inner Inspection		[illegible]
		House transformers inspection					[illegible]
		Excitation transformers inspection					[illegible]
		Planning of visual inspection for major facilities and detailed inspection					[illegible]
		Daily inspection work of site facilities, etc.					

6. Next Actions (2)

- **Seismic Safety Verification**
  - **Analyze the observation data.**
  - **Conduct geological surveys including sea and land areas around the site.**
  - **Conduct seismic safety verification for safety significant equipments based on seismic motion derived from analyses.**
  - **Take necessary countermeasures based on the results of the seismic safety verification.**
  - **Submitted the "Revision of the Seismic Safety Assessment Execution Plan" to METI on August 20.**
    - Though a seismic safety assessment was in progress based on the former plan submitted to METI in October 2006, due to the earthquake, METI ordered TEPCO to revise the plan. The revision was carried out and submitted to METI.

6. Next Actions (3)

[Outline of the Geological Survey to be Conducted at Kashiwazaki-Kariwa]

- Investigation and verification of active faults in the sea area surrounding the Kashiwazaki-Kariwa NPS.

  <Sonic Prospecting in the Sea Area>

  From August 27th, 2007 to the end of October, 2007.

- Investigation and verification of active faults in the land area surrounding the Kashiwazaki-Kariwa NPS.

  <Subsurface Prospecting>

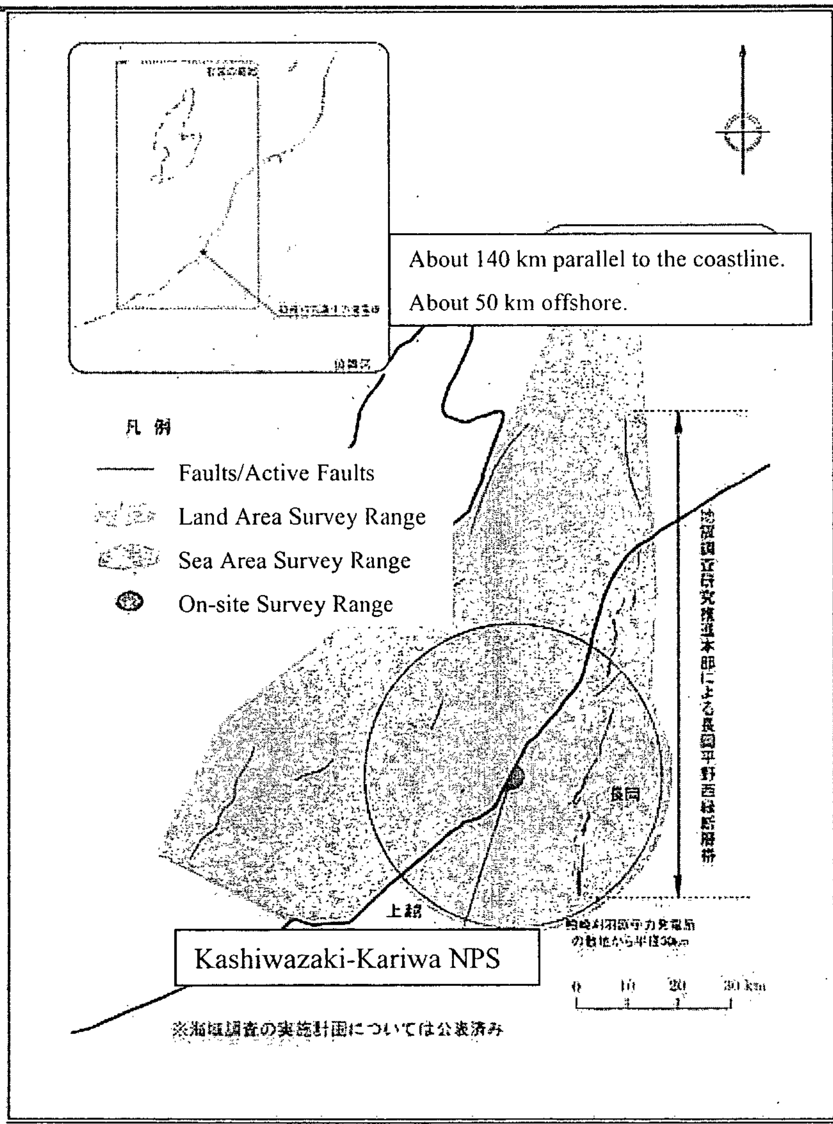
  <Surface Geological Survey>

  From the beginning of September, 2007 to the end of March, 2008.

- Investigation and verification of subsurface structure and ground quality including deep areas on the premises.

  <Boring/Geophysical Survey>

  From the beginning of September, 2007 to the end of March, 2008.



7. Forecast of Electric Demand and Supply (1)

Initial Forecast of Electric Demand and Supply (August)

■ Estimated Maximum Demand
61,100MW• 35.3°C• •

■ Forecast of Supply (**Monthly Average• •**)

Supply Before the Earthquake : 65,270 MW

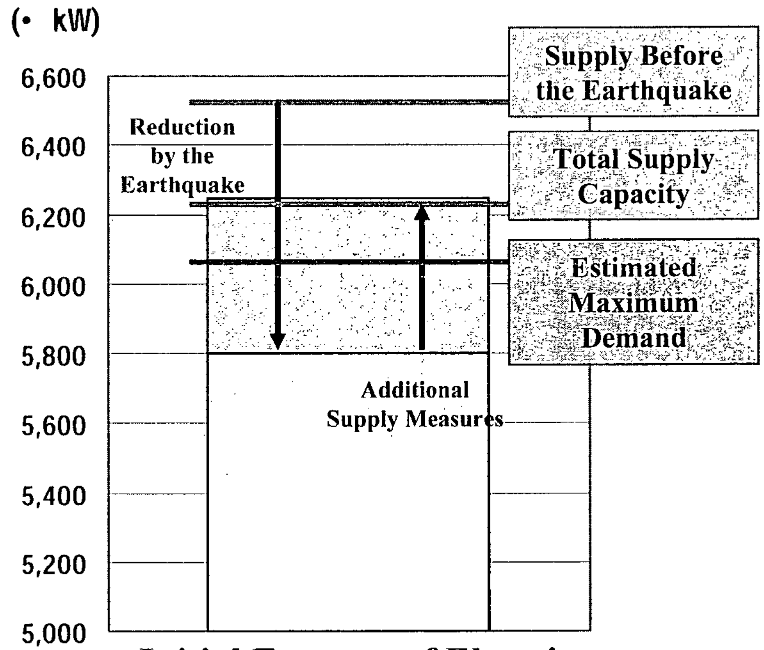
Reduction by the Earthquake : - 7,260 MW

Additional Supply Measures* : + 4,740 MW

Total Supply Capacity : 62,750 MW

* **Additional Supply Measures**

- •Output increase : 2,360MW
- •The power provided by other companies for emergency support : 1,660MW
- •Purchase of electricity from In-house power generation : 720MW



Initial Forecast of Electric Demand and Supply(August)

In case of ordinary summer heat, supply would be enough to cover demand. However, in case of a severe heat wave, we will secure stable supply by exercising measures such as calling our customers for more electricity conservation, reducing demand based on load management contracts (about 1,270MW), and utilizing the Shiobara Power Station (900MW) of which we acquired permit on an emergency and temporary usage.

7. Forecast of Electric Demand and Supply (2)

Situation of Maximum Demand on August 22nd

Maximum Demand• 61,470MW (37°C Tokyo)

<Major Emergency Measures>

- Demand reduction based on load management contracts : 140MW

  The contracts were set in motion since 1991,

  17 years since the last one.

  Requested 23 customers to reduce their demand.

Supply Capacity• 64,000MW

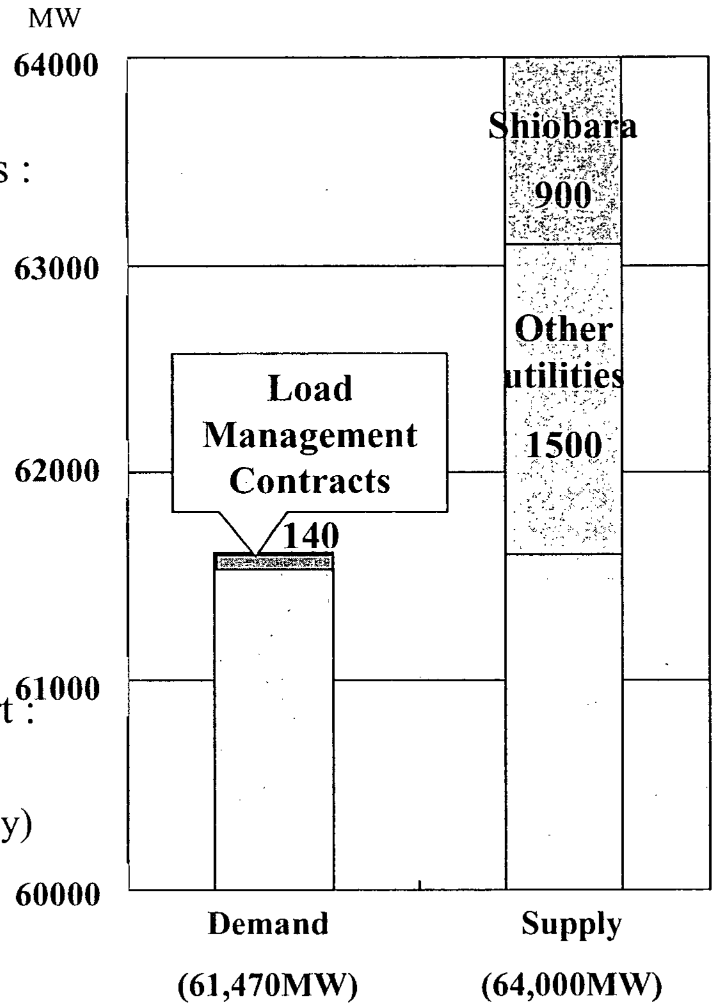
(reserved power 2,530MW, 4.1%)

<Major Emergency Measures>

- Power provided by other utilities for emergency support : 1,500MW

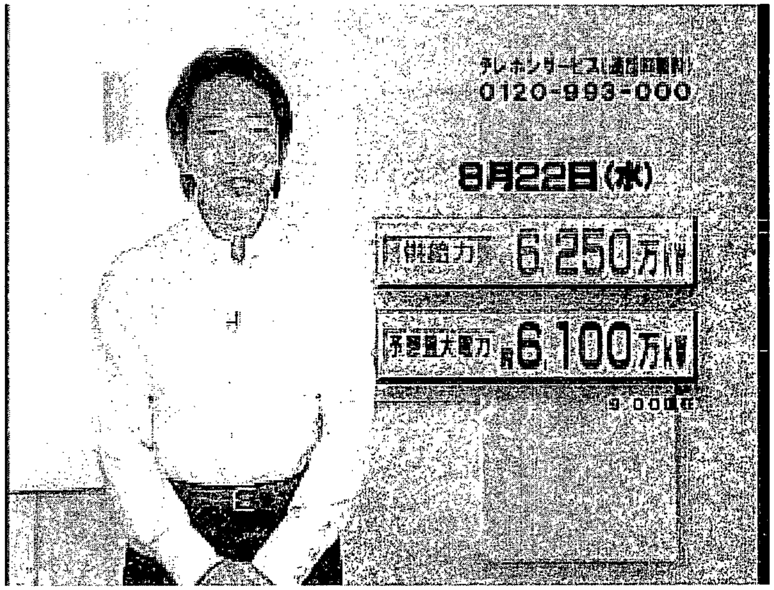
  (From Hokkaido, Tohoku, and Chubu Electric Power Company)

- Emergency and temporary use of Shiobara Power Station (900MW)



8. Request to Save Electricity in the Tokyo Metropolitan Area

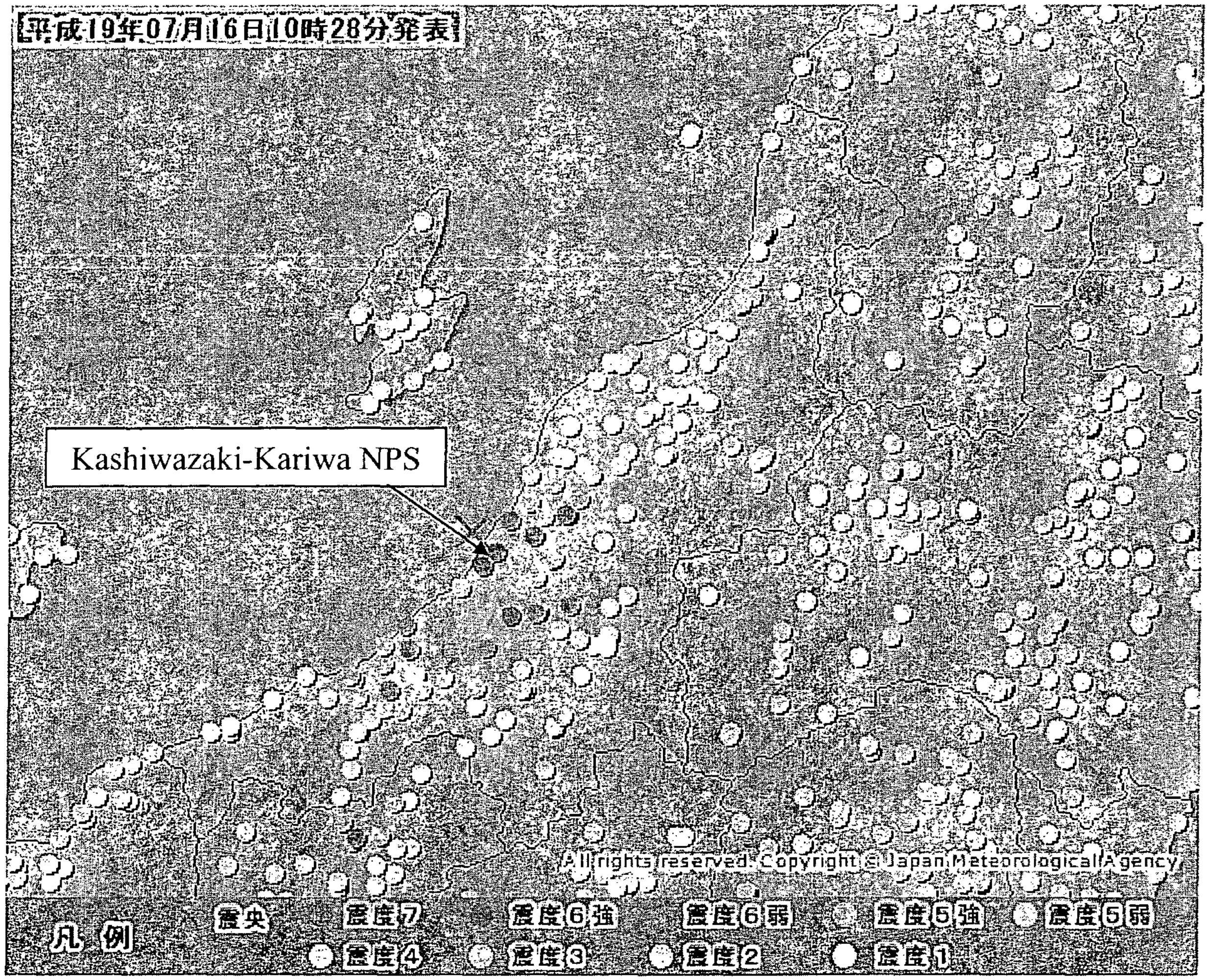
- Broadcasting "Denki Yoho"—an electricity demand forecast of TEPCO's supply areas — on TV and Radio.
- Posting "Denki Yoho" on the TEPCO website.
- Insertion of "Request to Save Electricity" in newspapers. (Distribution of 16 million issues in the Tokyo Metropolitan Area on August 1st)
- Broadcasting "Request to Save Electricity " on TV and Radio from August 1st.



8/22 "Denki Yoho"

- Distribution of leaflets to every customer by meter readers.
- Publicize saving electricity through the distribution of leaflets and goods.
- Display posters on saving electricity.
- Individual visitation to extra-high-voltage/high-voltage customers of over 500kW and to their head offices.
- Sending direct-mailers to industry groups.

(Reference 1) Earthquake Overview



- Date & Time of the Quake:
  July 16, 2007
  10:13 AM

- Source:
  Offshore of Kami-Chuestu-oki Region in Niigata Prefecture
  Latitude: 37• N
  Longitude: 138• E

- Depth: 17 km

- Magnitude
  M=6.8

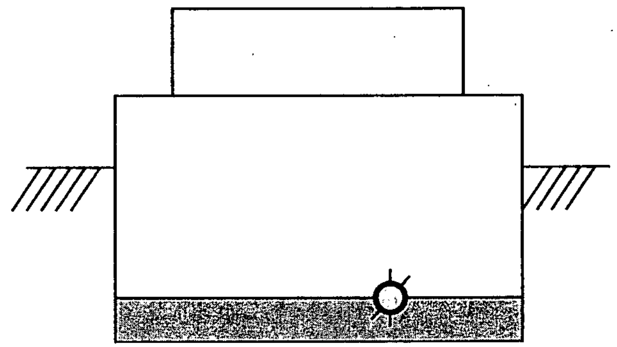
- Distance of NPS from:
  Epicenter: 16 km
  Source: 23 km

(Reference 2) Observed Seismic Data

- Observed seismic motion largely surpassed the design-basis seismic motion.

Observed maximum acceleration at each unit / design-basis response acceleration in brackets.

Observation Area	North-South Direction	East-West Direction	Vertical
Unit 1	**311**(274)	**680**(273)	**408**(235)
Unit 2	**304**(167)	**606**(167)	**282**(235)
Unit 3	**308**(192)	**384**(193)	**311**(235)
Unit 4	**310**(193)	**492**(194)	**337**(235)
Unit 5	**277**(249)	**442**(254)	**205**(235)
Unit 6	**271**(263)	**322**(263)	**488**(235)
Unit 7	**267**(263)	**356**(263)	**355**(235)



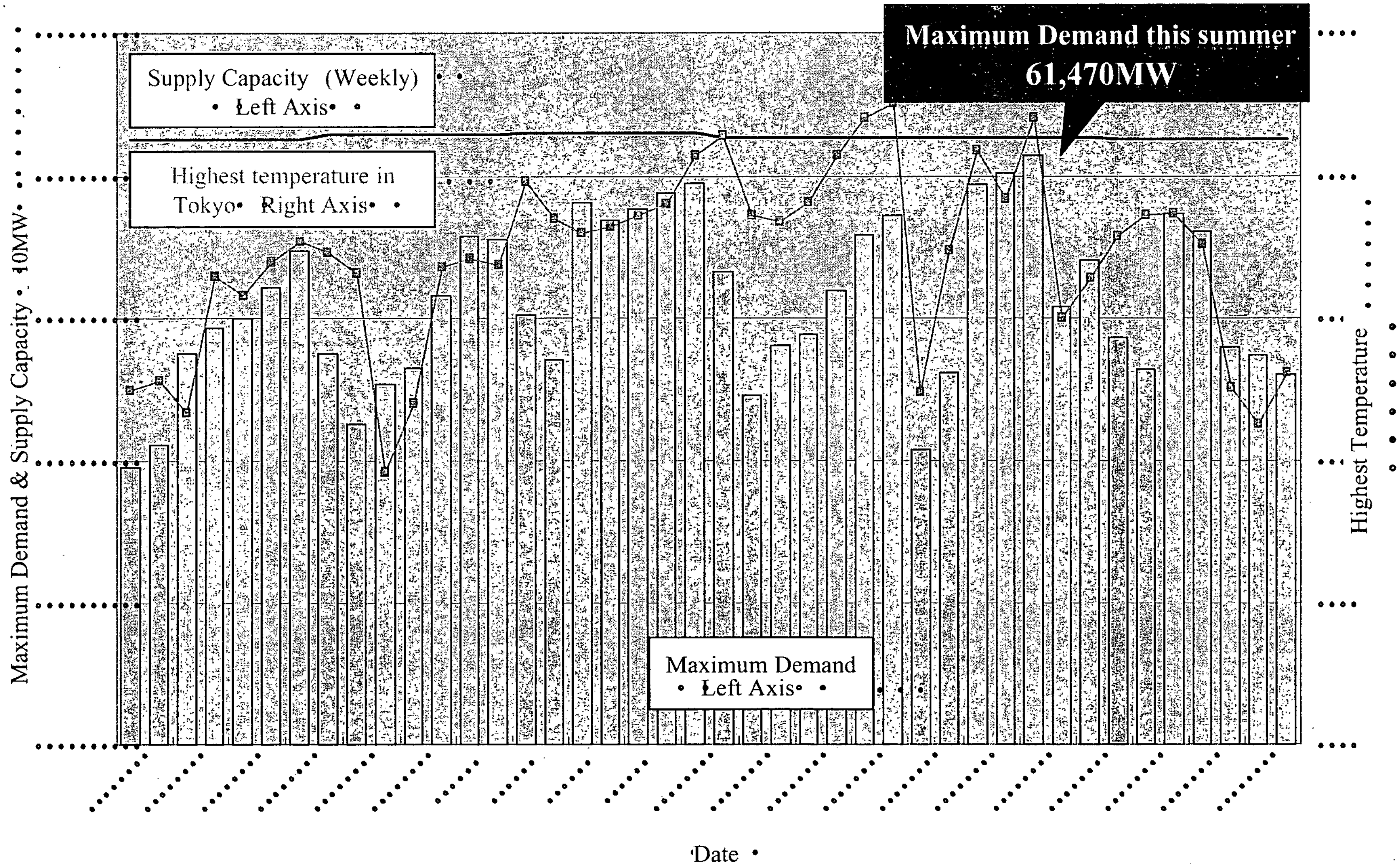
Seismograph

Measured by the base mat of each reactor building.

Unit of Measurement: (Gal)

- The base of the turbine in Unit 3 experienced the largest acceleration of 2058 Gal in the East-West direction (2.5 times the design-basis acceleration of 834 Gal).

(Reference 3) Actual Record of Demand and Supply



Bozin, Sunny

From: Nieh, Ho
Sent: Monday, March 21, 2011 4:27 AM
To: Franovich, Mike
Subject: Re: Commission activities - Japan event - update

Thanks Mike!

Sent via BlackBerry

Ho Nieh
Chief of Staff
Office of Commissioner William C. Ostendorff
U.S. Nuclear Regulatory Commission
(301) 415-1811 (office)
(b)(6)
(301) 415-1757 (fax)
ho.nieh@nrc.gov

From: Franovich, Mike
To: Nieh, Ho
Cc: Ostendorff, William; Warnick, Greg; Kock, Andrea; Zorn, Jason; Herr, Linda; Bozin, Sunny
Sent: Mon Mar 21 01:35:19 2011
Subject: RE: Commission activities - Japan event - update

Ho,

I checked with the RST. Casto had some images and drawings of the Unit 3 SFP/reactor building and he noted some differences existed between Units 1 and 2 and Unit 3 in terms of elevation, but they are all of the Mark I design type. Fundamentally, the elevated pool arrangement is similar to U.S. plants. There is some additional structural steel in the reactor building surrounding the SFP for additional seismic resistance.

We may not be in a position to really tell of the finer differences between Japanese and U.S. Mark I containments and the SFPs until a lessons learned is done. Of course there is some variability within our own fleet in the Mark I containments which we can discuss later (e.g., Brunswick).

Mike

-----Original Message-----
From: Nieh, Ho
Sent: Sunday, March 20, 2011 9:25 PM
To: Franovich, Mike; Warnick, Greg; Kock, Andrea; Zorn, Jason; Herr, Linda; Bozin, Sunny
Cc: Ostendorff, William
Subject: Commission activities - Japan event - update
Importance: High

Dear team,

WCO helped to make forward progress with respect to providing Commission direction to the staff and regarding tomorrow's Commission meeting. Will fill you in on the details tomorrow AM.

000/397

As far as the meeting goes, opening remarks are done and he has a list of questions that he is comfortable with - latest versions of relevant Japan stuff is attached for your info.

WCO will be in around 0730 tomorrow - we will have a quick staff meeting around 0815 to 0830 to discuss any issues for the Commission meeting (Linda/Sunny - you do not need to attend).

***Mike - can you please confirm that the Fukushima Daiichi BWRs have essentially the same SFP design/layout/elevation as US BWR Mark I plants - I understand that to be the case, just want to verify.

The only outstanding item is to put together some recommendations on the Commission's agenda over the next few months - GBJ just sent a proposal, I will cross-check that with what we talked about on Friday.

See you tomorrow.

Ho

PS - sending attachments via Outlook web access so you may have trouble accessing them, if you have a problem, I'll have all the stuff on the G-drive tomorrow AM.

Ho Nieh
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Office of Commissioner William C. Ostendorff U.S. Nuclear Regulatory Commission
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(b)(6)
(301) 415-1757 (fax)
ho.nieh@nrc.gov

Kock, Andrea

From: Nieh, Ho
Sent: Monday, March 21, 2011 4:35 AM
To: Warnick, Greg
Cc: Ostendorff, William; Franovich, Mike
Subject: SONGS

Greg - fyi on some fed/state gov't activities on SONGS due to Japan event.

http://www.sacbee.com/2011/03/20/3490976/calls-heat-up-for-reviews-of-california.html

Ho

Ho Nieh
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(301) 415-1757 (fax)
ho.nieh@nrc.gov

000/398

Bozin, Sunny

From: Nieh, Ho
Sent: Monday, March 21, 2011 7:33 PM
To: Stern, Warren
Subject: RE: Hey

Hanging in there Warren - thanks for checking in.

As you can imagine, the Japan events are a big deal. The NRC is initiating action to assess the implications...stay tuned.

Glad that the weather is getting nicer - if you have time, let's meet up for a ride one of these weekends.

Cheers, Ho

Ho Nieh
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Office of Commissioner William C. Ostendorff U.S. Nuclear Regulatory Commission
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(b)(6)
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ho.nieh@nrc.gov

From: Stern, Warren [Warren.Stern@dhs.gov]
Sent: Monday, March 21, 2011 2:42 PM
To: Nieh, Ho
Subject: RE: Hey

Hi Ho. How are you holding up?

From: prvs=987db7d8a=Ho.Nieh@nrc.gov [mailto:prvs=987db7d8a=Ho.Nieh@nrc.gov] On Behalf Of Nieh, Ho
Sent: Thursday, January 13, 2011 12:02 PM
To: Stern, Warren
Cc: Patrick, Shirley A (CTR)
Subject: RE: Hey

This message has been archived. View the original item <http://ZAS1EV-0312-EVP.DHSNET.DS1.DHS/EnterpriseVault/ViewMessage.asp?VaultId=160625A822C76944EB586A4D3272C66E51110000dhshq-evp.DHSNET.DS1.DHS&SavesetId=860000000000000~201101131701460000~0~76917F443B124042B6BD70390BC6042>

Shirley – I will meet him in the elevator lobby outside the Chairman's office around 1:45.

Can you please let Warren know that I may be a couple minutes late because I will be returning from another appointment.

Thanks.

000399

Hó

From: Nguyen, Quynh
To: Couret, Ivonne; Burnell, Scott; McIntyre, David
Cc: Nelson, Robert; Meighan, Sean
Subject: FOR REVIEW: Action: Seismic Q&As
Date: Monday, March 21, 2011 7:51:46 AM
Attachments: Frequently asked questions related to the March 11 2011 Earthquake and Tsunami 3-19-2011.docx
image001.png
Importance: High

Can you guys bless it? Jennifer Uhle is Deputy Office Director in RES and she reviewed it.

From: Kammerer, Annie
Sent: Saturday, March 19, 2011 8:33 AM
To: Nelson, Robert
Cc: Roberts, Darrell; Croteau, Rick; Kennedy, Kriss; Lara, Julio; West, Steven; Shear, Gary; Ruland, William; Boger, Bruce; Meighan, Sean; Nguyen, Quynh; Giitter, Joseph; Burnell, Scott; Brenner, Eliot; Case, Michael; Munson, Clifford; Ake, Jon; Hogan, Rosemary
Subject: RE: Action: Seismic Q&As

OK. Here is the proposed set of public Q&As for publication next week. I think it's pretty good, at least it's the best I can do. Jennifer Uhle did a pretty thorough review for me.

I didn't end up including the plant specific questions because it was too awkward. We could theoretically do a separate add on.

Annie

From: Nelson, Robert
Sent: Thursday, March 17, 2011 2:18 PM
To: Kammerer, Annie
Cc: Roberts, Darrell; Croteau, Rick; Kennedy, Kriss; Lara, Julio; West, Steven; Shear, Gary; Ruland, William; Boger, Bruce; Meighan, Sean; Nguyen, Quynh; Giitter, Joseph
Subject: Action: Seismic Q&As
Importance: High

Annie:

The regions have a critical need for publicly releasable seismic info (Qs & As) to support public meetings beginning next week. We need a releasable version of your document. Can you assemble the info that you have prepared that you believe is good to go. We can then get that reviewed by OPA. Need your input tomorrow.

Robert A. Nelson
Deputy Director
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation
U.S.NRC
United States Nuclear Regulatory Commission
Protecting People and the Environment
E-mail: robert.nelson@nrc.gov | Office: (301) 415-1453 | Cell: (b)(6) | Fax: (301) 415-2102|

From: Kammerer, Annie
Sent: Thursday, March 17, 2011 2:36 AM
To: Kammerer, Annie; Hiland, Patrick; Skeen, David; Case, Michael; RST01 Hoc
Cc: Howe, Allen; Nelson, Robert; Stutzke, Martin; Giitter, Joseph; Rihm, Roger; McDermott, Brian; Hasselberg, Rick; Chokshi, Nilesh; Munson, Clifford; Cook, Christopher; Flanders, Scott; Ross-Lee, MaryJane; Brown, Frederick; Giitter, Joseph; Howe, Allen; Ruland, William; Dudes, Laura; Karas, Rebecca; Ake, Jon; Munson, Clifford; Hogan, Rosemary; Uhle, Jennifer; Marshall, Michael; Uselding, Lara; Randall, John; Allen, Don; Burnell, Scott; Hayden, Elizabeth; Pires, Jose; Graves, Herman; Candra, Hernando; Murphy, Andrew; Murphy, Andrew; Pires, Jose; Hogan, Rosemary; Sheron, Brian; Dricks, Victor; Warnick, Greg; Reynoso, John; Lantz, Ryan; Markley, Michael; Orders, William; Santiago, Patricia; Snodderly, Michael; Baggett, Steven; Sosa, Belkys; Davis, Roger; Franovich, Mike; Castleman, Patrick; Sharkey, Jeffry; Boska, John; Ma, John; Tegeler, Bret; Patel, Pravin; Shams, Mohamed; Morris, Scott; Brenner, Eliot; Harrington, Holly; Seber, Dogan; Ledford, Joey; Johnson, Michael; Virgilio, Martin; Holahan, Vincent; Bergman, Thomas
Subject: Seismic Q&As March 17th 2am update

All,

As promised, a sharepoint site has been set up where our friends in NRR will be posting the latest version of the Seismic Q&A document on an ongoing basis. If someone would prefer to use the sharepoint site, instead of being on this distribution list, please let me know...
http://portal.nrc.gov/edo/nrr/NRR%20TA/FAQ%20Related%20to%20Events%20Occuring%20in%20Japan/Forms/AllItems.aspx

This latest update has a number of new questions (not many with answers today, but we are working hard). A high priority

000/400

question we are working on is "how many plants are near a mapped active fault". We're focusing on anything within 50 miles. We're also pulling relevant questions from the congressional inquiries we just received; and will also give these high priority to support any needs by NRR.

Many new figures and some draft fact sheets have added to the "additional information" section. These include the NRO half of a tsunami fact sheet...a description of the tsunami research is still to come from RES.

Some good news: Yesterday's version seems to have been widely forwarded around the agency. So, we are also starting to get some excellent questions from staff looking forward. This is allowing us to feel that we are finally getting out in front of things to a small degree. Also, our team has grown and we now have someone acting as source of seismic expertise for the 11pm to 7 am shift. This means that we now have seismic experts available to the RST and OPA at the Op Center 24 hours, with 2 people during the day. That extra support is allowing us to get this out at least an hour earlier today ☺

We are continuing to compile the questions that come in and update the seismic Q&A document. If you have suggested changes, or want to provide missing answers, please forward them to me for compilation.

This is a living document and will be updated daily in the foreseeable future.

Happy St. Paddy's Day. May the world (especially our friends in Japan) have the luck of the Irish today.

Cheers,
Annie

Dr. Annie Kammerer, PE
Senior Seismologist and Earthquake Engineer
US Nuclear Regulatory Commission
Office of Nuclear Regulatory Research
Washington DC 20555
(b)(6) mobile
BB

From: Kammerer, Annie
Sent: Tuesday, March 15, 2011 3:41 AM
To: Hiland, Patrick; Skeen, David
Cc: Howe, Allen; Nelson, Robert; Stutzke, Martin; Giitter, Joseph; Rihm, Roger; McDermott, Brian; Hasselberg, Rick; Kammerer, Annie; Chokshi, Nilesh; Munson, Clifford; Cook, Christopher; Flanders, Scott; Ross-Lee, MaryJane; Brown, Frederick; Giitler, Joseph; Howe, Allen; Case, Michael; Ruland, William; Dudes, Laura; Karas, Rebecca; Ake, Jon; Munson, Clifford; Hogan, Rosemary; Uhle, Jennifer; Marshall, Michael; Uselding, Lara; Randall, John; Allen, Don; Burnell, Scott; Hayden, Elizabeth; Pires, Jose; Graves, Herman; Candra, Hernando; Murphy, Andrew; Murphy, Andrew; Pires, Jose; Hogan, Rosemary; Sheron, Brian; Dricks, Victor; Warnick, Greg; Reynoso, John; Lantz, Ryan; Markley, Michael
Subject: latest version of Q&As

All,

This is the first draft of the seismic-specific Q&As. It is pretty rough and there are many answers still missing, but people have contributed a lot and we thought it may be useful for many people trying to answer questions coming in.

We are continuing to compile the questions that come in and update the seismic Q&A document. If you have suggested changes, or want to provide missing answers, please forward them to me for compilation.

This is a living document and will be updated daily in the foreseeable future.

Annie

Dr. Annie Kammerer, PE
Senior Seismologist and Earthquake Engineer
US Nuclear Regulatory Commission
Office of Nuclear Regulatory Research
Washington DC 20555
(b)(6) mobile
BB

From: Kammerer, Annie
To: McIntyre, David; Harrington, Holly
Cc: Brenner, Eliot; Hayden, Elizabeth; Munson, Clifford; Ake, Jon
Subject: Re: FAQ questions posted
Date: Sunday, March 20, 2011 11:07:52 AM

I've got it. It's not wrong. I'll expand the sentence. Give me a minute to get online and look at the doc.

Cheers,
Annie

Sent from an NRC blackberry
Annie Kammerer
mobile (b)(6)
bb (b)(6)
annie.kammerer@nrc.gov

From: McIntyre, David
To: Harrington, Holly; Kammerer, Annie
Cc: Brenner, Eliot; Hayden, Elizabeth; Munson, Clifford; Ake, Jon
Sent: Sun Mar 20 10:57:22 2011
Subject: RE: FAQ questions posted

Replying to include Cliff Munson and Jon Ake of Annie's team.

From: Harrington, Holly
Sent: Sunday, March 20, 2011 10:50 AM
To: Kammerer, Annie
Cc: McIntyre, David; Brenner, Eliot; Hayden, Elizabeth
Subject: RE: FAQ questions posted

Please see comment below. Please let me know if this document needs to be changed.

From: Christine Goulet [mailto:goulet@berkeley.edu]
Sent: Saturday, March 19, 2011 5:54 PM
To: OPA Resource
Subject: ERROR in your answers to faqs related to Japan document

Good afternoon,

I just opened your pdf at http://www.nrc.gov/japan/faqs-related-to-japan.pdf and found a **major error** in the answer to question 1.
At the bottom of the answer, "ten times" should be replaced by "approximately 32 times":
"Magnitude is measured on a log scale and so a magnitude 9 earthquake is ten times larger than a magnitude 8 earthquake."

I hope this can be corrected soon!

Sincerely,

Christine Goulet, PhD
Assistant Researcher
NGA East TI team co-chair
Pacific Earthquake Engineering Research Center (PEER),
University of California, Berkeley

Tel (510) 374-4620
goulet@berkeley.edu

From: Kammerer, Annie
Sent: Saturday, March 19, 2011 5:25 PM
To: Kammerer, Annie; Hiland, Patrick; Skeen, David; Case, Michael; RST01 Hoc
Cc: Howe, Allen; Nelson, Robert; Stutzke, Martin; Giitter, Joseph; Rihm, Roger; McDermott, Brian; Hasselberg, Rick; Chokshi, Nilesh; Munson, Clifford; Cook, Christopher; Flanders, Scott; Ross-Lee, MaryJane; Brown, Frederick; Ruland, William; Dudes, Laura; Karas, Rebecca; Ake, Jon; Hogan, Rosemary; Uhle, Jennifer; Marshall, Michael; Uselding, Lara; Randall, John; Allen, Don; Burnell, Scott; Hayden, Elizabeth; Pires, Jose; Graves, Herman; Candra, Hernando; Murphy, Andrew; Sheron, Brian; Dricks, Victor; Warnick, Greg; Reynoso, John; Lantz, Ryan; Markley, Michael; Orders, William; Santiago, Patricia; Snodderly, Michael; Baggett, Steven; Sosa, Belkys; Davis, Roger; Franovich, Mike; Castleman, Patrick; Sharkey, Jeffry; Boska, John; Ma, John; Tegeler, Bret; Patel, Pravin; Shams, Mohamed; Morris, Scott; Brenner, Eliot; Harrington, Holly; Seber, Dogan; Ledford, Joey; Johnson, Michael; Virgilio, Martin; Holahan, Vincent; Bergman, Thomas; Webb, Michael; Manoly, Kamal; Khanna, Meena; Screnci, Diane; Thomas, Eric; Nguyen, Quynh; Meighan, Sean; 'FOIAResource.hoc@nrc.gov'
Subject: FAQ questions posted

From: Kammerer, Annie
To: Harrington, Holly
Cc: McIntyre, David; Brenner, Eliot; Hayden, Elizabeth; Munson, Clifford; Ake, Jon; Burnell, Scott
Subject: RE: FAQ questions posted
Date: Sunday, March 20, 2011 10:10:53 PM

I just saw a second document entitled, "**Frequently Asked Questions About the Japan Nuclear Crisis: "Can It Happen Here?"**

There is an error in the question:

Are nuclear power plants along the coasts vulnerable to tsunami?
Large tsunami such as the one that hit Japan typically are caused by "subduction" faults, where one tectonic plate slides under another. There is only one such fault near the U.S. coastline – off the northern part of the West Coast, from northern California up past Oregon and Washington. There are no coastal nuclear power plants in this region. The closest plant, in southern California, is well protected against tsunami.
Along the Gulf Coast and the Atlantic Coast, storm surge from hurricanes poses a greater threat than tsunami to nuclear power plants. The plants in these regions are well protected against hurricane storm surge.

The closest plant is Diablo canyon. Most people from California (myself included) would not call the region that Diablo is in "southern California", but rather the central California coast. SONGS is in So. Cal. We can't really say that SONGS is "well protected against tsunami"...it's adequately protected. Also, this makes it seem like hurricanes are always a greater threat than tsunami. The NRC's tsunami research program is showing that this is not true on the north Atlantic coast. As you get toward the moderate seismic zone in coastal Canada, the tsunami exceeds the storm surge due to the potential for large local tsunami from seismically-induced landslides.

A better answer is:
Large tsunami such as the one that hit Japan typically are caused by faults located in "subduction" zones, where one tectonic plate slides under another. There is only one such fault near the U.S.
coastline – off the northern part of the West Coast, from northern California up past Oregon and Washington. There are no coastal nuclear power plants in this region. The closest coastal plant, located along the central California coastline is the Diablo Canyon nuclear plant. This nuclear plant is well protected against tsunami. Along the Gulf Coast and the Atlantic Coast, storm surge from hurricanes generally poses a greater threat to nuclear plants than tsunami. The plants in these regions are well protected against hurricane storm surge.

From: Harrington, Holly
Sent: Sunday, March 20, 2011 11:34 AM
To: Kammerer, Annie
Cc: McIntyre, David; Brenner, Eliot; Hayden, Elizabeth; Munson, Clifford; Ake, Jon; Burnell, Scott
Subject: RE: FAQ questions posted

Thanks Annie.

Eliot/Beth: Do we think this can wait until Monday to be updated on the Web?

Holly

From: Kammerer, Annie
Sent: Sunday, March 20, 2011 11:31 AM
To: Harrington, Holly
Cc: McIntyre, David; Brenner, Eliot; Hayden, Elizabeth; Munson, Clifford; Ake, Jon
Subject: RE: FAQ questions posted

Change it to this....

"Magnitude is measured on a log scale and so a magnitude 9 earthquake produces about ten times stronger shaking and releases about 31 times more energy than a magnitude 8 earthquake."

I was trying to keep things simple to be more user friendly. I thought that people would find this confusing a little. People feel wave amplitude, not energy...so I chose the thing that people could relate to. But engineers, like Christine, think about energy absorption in structures.

Anyway, just so you know, Christine is a good friend of mine and she is supported as full time staff (the project manager) on a major research project funded by NRC, DOE, EPRI and the USGS (called NGA-East). So, she's very protective of the NRC and is on the lookout for anything that may related to us and is inaccurate, or can be misinterpreted. She's one of the many people out there who have our backs when it comes to what is going out in the press.

Annie

P.S. This is straight from a USGS fact sheet. "Because of the logarithmic basis of the scale, each whole number increase in magnitude represents a tenfold increase in measured amplitude; as an estimate of energy, each whole number step in the magnitude scale corresponds to the release of about 31 times more energy than the amount associated with the preceding whole number value."

From: Harrington, Holly
Sent: Sunday, March 20, 2011 10:50 AM
To: Kammerer, Annie
Cc: McIntyre, David; Brenner, Eliot; Hayden, Elizabeth
Subject: RE: FAQ questions posted

Please see comment below. Please let me know if this document needs to be changed.

From: Christine Goulet [mailto:goulet@berkeley.edu]
Sent: Saturday, March 19, 2011 5:54 PM
To: OPA Resource
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"Magnitude is measured on a log scale and so a magnitude 9 earthquake is ten times larger than a magnitude 8 earthquake."

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Christine Goulet, PhD
Assistant Researcher
NGA East TI team co-chair
Pacific Earthquake Engineering Research Center (PEER),
University of California, Berkeley

Tel (510) 374-4620
goulet@berkeley.edu

From: Kammerer, Annie
Sent: Saturday, March 19, 2011 5:25 PM
To: Kammerer, Annie; Hiland, Patrick; Skeen, David; Case, Michael; RST01 Hoc
Cc: Howe, Allen; Nelson, Robert; Stutzke, Martin; Giitter, Joseph; Rihm, Roger; McDermott, Brian; Hasselberg, Rick; Chokshi, Nilesh; Munson, Clifford; Cook, Christopher; Flanders, Scott; Ross-Lee, MaryJane; Brown, Frederick; Ruland, William; Dudes, Laura; Karas, Rebecca; Ake, Jon; Hogan, Rosemary; Uhle, Jennifer; Marshall, Michael; Uselding, Lara; Randall, John; Allen, Don; Burnell, Scott; Hayden, Elizabeth; Pires, Jose; Graves, Herman; Candra, Hernando; Murphy, Andrew; Sheron, Brian; Dricks, Victor; Warnick, Greg; Reynoso, John; Lantz, Ryan; Markley, Michael; Orders, William; Santiago, Patricia; Snodderly, Michael; Baggett, Steven; Sosa, Belkys; Davis, Roger; Franovich, Mike; Castleman, Patrick; Sharkey, Jeffry; Boska, John; Ma, John; Tegeler, Bret; Patel, Pravin; Shams, Mohamed; Morris, Scott; Brenner, Eliot; Harrington, Holly; Seber, Dogan; Ledford, Joey; Johnson, Michael; Virgilio, Martin; Holahan, Vincent; Bergman, Thomas; Webb, Michael; Manoly, Kamal; Khanna, Meena; Screnci, Diane; Thomas, Eric; Nguyen, Quynh; Meighan, Sean; 'FOIAResource.hoc@nrc.gov'
Subject: FAQ questions posted

All,

For your reading enjoyment, and in anticipation of the end of cycle meetings in the regions next week, the NRC has issued a press release announcing a publically available set of FAQs on the earthquake and tsunami.

I hope people find it helpful!

Cheers,
Annie

PS special thanks to Jennifer Uhle who stayed after her overnight shift in the Ops Center to review and provide outstanding comments that really improved the document.

From: Kammerer, Annie
Sent: Saturday, March 19, 2011 9:00 AM
To: Kammerer, Annie; Hiland, Patrick; Skeen, David; Case, Michael; RST01 Hoc
Cc: Howe, Allen; Nelson, Robert; Stutzke, Martin; Giitter, Joseph; Rihm, Roger; McDermott, Brian; Hasselberg, Rick; Chokshi, Nilesh; Munson, Clifford; Cook, Christopher; Flanders, Scott; Ross-Lee, MaryJane; Brown, Frederick; Ruland, William; Dudes, Laura; Karas, Rebecca; Ake, Jon;

Hogan, Rosemary; Uhle, Jennifer; Marshall, Michael; Uselding, Lara; Randall, John; Allen, Don; Burnell, Scott; Hayden, Elizabeth; Pires, Jose; Graves, Herman; Candra, Hernando; Murphy, Andrew; Sheron, Brian; Dricks, Victor; Warnick, Greg; Reynoso, John; Lantz, Ryan; Markley, Michael; Orders, William; Santiago, Patricia; Snodderly, Michael; Baggett, Steven; Sosa, Belkys; Davis, Roger; Franovich, Mike; Castleman, Patrick; Sharkey, Jeffry; Boska, John; Ma, John; Tegeler, Bret; Patel, Pravin; Shams, Mohamed; Morris, Scott; Brenner, Eliot; Harrington, Holly; Seber, Dogan; Ledford, Joey; Johnson, Michael; Virgilio, Martin; Holahan, Vincent; Bergman, Thomas; Webb, Michael; Manoly, Kamal; Khanna, Meena; Screnci, Diane; Thomas, Eric; Nguyen, Quynh; Meighan, Sean; FOIAResource.hoc@nrc.gov
Subject: Seismic Q&As March 19th 8am update

All,

Here is today's updated version. Lot of new fact sheets have been prepared for various briefings and for Monday's public meeting!

However, the big news of the day is that we just sent off a 6 page, 22 question, much better edited version for a public Q&A set. It's all in OPA's capable hands now. I think it's pretty good...but then I'm biased.

Cheers,
Annie

From: Kammerer, Annie
Sent: Friday, March 18, 2011 6:51 AM
To: Kammerer, Annie; Hiland, Patrick; Skeen, David; Case, Michael; RST01 Hoc
Cc: Howe, Allen; Nelson, Robert; Stutzke, Martin; Giitter, Joseph; Rihm, Roger; McDermott, Brian; Hasselberg, Rick; Chokshi, Nilesh; Munson, Clifford; Cook, Christopher; Flanders, Scott; Ross-Lee, MaryJane; Brown, Frederick; Ruland, William; Dudes, Laura; Karas, Rebecca; Ake, Jon; Hogan, Rosemary; Uhle, Jennifer; Marshall, Michael; Uselding, Lara; Randall, John; Allen, Don; Burnell, Scott; Hayden, Elizabeth; Pires, Jose; Graves, Herman; Candra, Hernando; Murphy, Andrew; Sheron, Brian; Dricks, Victor; Warnick, Greg; Reynoso, John; Lantz, Ryan; Markley, Michael; Orders, William; Santiago, Patricia; Snodderly, Michael; Baggett, Steven; Sosa, Belkys; Davis, Roger; Franovich, Mike; Castleman, Patrick; Sharkey, Jeffry; Boska, John; Ma, John; Tegeler, Bret; Patel, Pravin; Shams, Mohamed; Morris, Scott; Brenner, Eliot; Harrington, Holly; Seber, Dogan; Ledford, Joey; Johnson, Michael; Virgilio, Martin; Holahan, Vincent; Bergman, Thomas; Webb, Michael; Manoly, Kamal; Khanna, Meena; Screnci, Diane; Thomas, Eric; Nguyen, Quynh; Meighan, Sean
Subject: RE: Seismic Q&As March 18th 5am update

All,

Please see the updated version of the Seismic Q&As.

Among today's highlights:
*We added a Terms and Definitions section at the end of the document. (We know that an acronyms list would be helpful too, but it will have to wait a little)
*The "additional information" section has been split into tables, plots, and fact sheets
*A high-level draft fact sheet on NRC's seismic regulations has been added
*We added a section to track outstanding questions that have come in from congress. This will support those who get the tickets in the short terms (most likely NRR). The questions will be moved to the appropriate sections long term (as long as they are not duplicates.)

I'm sure we all agree this has been a crazy week!. We're hoping that the weekend workload is lighter (if only because we won't get as many email from in house) and we can clean up this document and fill in some of the missing answers in preparation for the news story changing. We're trying hard to get out in front of the next wave.

Cheers,
Annie

From: Kammerer, Annie
Sent: Thursday, March 17, 2011 2:36 AM
To: Kammerer, Annie; Hiland, Patrick; Skeen, David; Case, Michael; RST01 Hoc
Cc: Howe, Allen; Nelson, Robert; Stutzke, Martin; Giitter, Joseph; Rihm, Roger; McDermott, Brian; Hasselberg, Rick; Chokshi, Nilesh; Munson, Clifford; Cook, Christopher; Flanders, Scott; Ross-Lee, MaryJane; Brown, Frederick; Giitter, Joseph; Howe, Allen; Ruland, William; Dudes, Laura; Karas, Rebecca; Ake, Jon; Munson, Clifford; Hogan, Rosemary; Uhle, Jennifer; Marshall, Michael; Uselding, Lara; Randall, John; Allen, Don; Burnell, Scott; Hayden, Elizabeth; Pires, Jose; Graves, Herman; Candra, Hernando; Murphy, Andrew; Murphy, Andrew; Pires, Jose; Hogan, Rosemary; Sheron, Brian; Dricks, Victor; Warnick, Greg; Reynoso, John; Lantz, Ryan; Markley, Michael; Orders, William; Santiago, Patricia; Snodderly, Michael; Baggett, Steven; Sosa, Belkys; Davis, Roger; Franovich, Mike; Castleman, Patrick; Sharkey, Jeffry; Boska, John; Ma, John; Tegeler, Bret; Patel, Pravin; Shams, Mohamed; Morris, Scott; Brenner, Eliot; Harrington, Holly; Seber, Dogan; Ledford, Joey; Johnson, Michael; Virgilio, Martin; Holahan, Vincent; Bergman, Thomas
Subject: Seismic Q&As March 17th 2am update

All,

As promised, a sharepoint site has been set up where our friends in NRR will be posting the latest version of the Seismic Q&A document on an ongoing basis. If someone would prefer to use the sharepoint site, instead of being on this distribution list, please let me know...
http://portal.nrc.gov/edo/nrr/NRR%20TA/FAQ%20Related%20to%20Events%20Occuring%20in%20Japan/Forms/AllItems.aspx

This latest update has a number of new questions (not many with answers today, but we are working hard). A high priority question we are working on is "how many plants are near a mapped active fault". We're focusing on anything within 50 miles. We're also pulling relevant questions from the congressional inquiries we just received; and will also give these high priority to support any needs by NRR.

Many new figures and some draft fact sheets have added to the "additional information" section. These include the NRO half of a tsunami fact sheet...a description of the tsunami research is still to come from RES.

Some good news: Yesterday's version seems to have been widely forwarded around the agency. So, we are also starting to get some excellent questions from staff looking forward. This is allowing us to feel that we are finally getting out in front of things to a small degree. Also, our team has grown and we now have someone acting as source of seismic expertise for the 11pm to 7 am shift. This means that we now have seismic experts available to the RST and OPA at the Op Center 24 hours, with 2 people during the day. That extra support is allowing us to get this out at least an hour earlier today ☺

We are continuing to compile the questions that come in and update the seismic Q&A document. If you have suggested changes, or want to provide missing answers, please forward them to me for compilation.

This is a living document and will be updated daily in the foreseeable future.

Happy St. Paddy's Day. May the world (especially our friends in Japan) have the luck of the Irish today.

Cheers,
Annie

Dr. Annie Kammerer, PE
Senior Seismologist and Earthquake Engineer
US Nuclear Regulatory Commission
Office of Nuclear Regulatory Research
Washington DC 20555
(b)(6) mobile
BB

From: Kammerer, Annie
Sent: Tuesday, March 15, 2011 3:41 AM
To: Hiland, Patrick; Skeen, David
Cc: Howe, Allen; Nelson, Robert; Stutzke, Martin; Giitter, Joseph; Rihm, Roger; McDermott, Brian; Hasselberg, Rick; Kammerer, Annie; Chokshi, Nilesh; Munson, Clifford; Cook, Christopher; Flanders, Scott; Ross-Lee, MaryJane; Brown, Frederick; Giitter, Joseph; Howe, Allen; Case, Michael; Ruland, William; Dudes, Laura; Karas, Rebecca; Ake, Jon; Munson, Clifford; Hogan, Rosemary; Uhle, Jennifer; Marshall, Michael; Uselding, Lara; Randall, John; Allen, Don; Burnell, Scott; Hayden, Elizabeth; Pires, Jose; Graves, Herman; Candra, Hernando; Murphy, Andrew; Murphy, Andrew; Pires, Jose; Hogan, Rosemary; Sheron, Brian; Dricks, Victor; Warnick, Greg; Reynoso, John; Lantz, Ryan; Markley, Michael
Subject: latest version of Q&As

All,

This is the first draft of the seismic-specific Q&As. It is pretty rough and there are many answers still missing, but people have contributed a lot and we thought it may be useful for many people trying to answer questions coming in.

We are continuing to compile the questions that come in and update the seismic Q&A document. If you have suggested changes, or want to provide missing answers, please forward them to me for compilation.

This is a living document and will be updated daily in the foreseeable future.

Annie

Dr. Annie Kammerer, PE
Senior Seismologist and Earthquake Engineer
US Nuclear Regulatory Commission
Office of Nuclear Regulatory Research
Washington DC 20555
(b)(6) mobile
BB

NRC frequently asked questions related to the March 11, 2011 Japanese Earthquake and Tsunami

3-19-11 Version

Compiled by Annie Kammerer, Jon Ake, and Cliff Munson for submission to OPA and NRR. We would appreciate getting an edited word file back to assure that the public comments and the internal document are consistent.

List of Questions

1) Can an earthquake and tsunami as large as happened in Japan also happen here?

This earthquake occurred on a "subduction zone", which is the type of tectonic region that produces earthquakes of the largest magnitude. A subduction zone is a tectonic plate boundary where one tectonic plate is pushed under another plate. Subduction zone earthquakes are also required to produce the kind of massive tsunami seen in Japan. In the continental US, the only subduction zone is the Cascadia subduction zone which lies off the coast of northern California, Oregon and Washington. So, a continental earthquake and tsunami as large as in Japan could only happen there. The only nuclear plant near the Cascadia subduction zone is the Columbia Generating Station. This plant is located a large distance from the coast (approximately 225 miles) and the subduction zone (approximately 300 miles), so the ground motions estimated at the plant are far lower than those seen at the Fukushima plants. This distance also precludes the possibility of a tsunami affecting the plant. Outside of the Cascadia subduction zone, earthquakes are not expected to exceed a magnitude of approximatly 8. Magnitude is measured on a log scale and so a magnitude 9 earthquake is ten times larger than a magnitude 8 earthquake.

2) Did the Japanese underestimate the size of the maximum credible earthquake and tsunami that could affect the plants?

The magnitude of the earthquake was somewhat greater than was expected for that part of the subduction zone. However, the Japanese nuclear plants were recently reassessed using ground motion levels similar to those that are believed to have occurred at the sites. The ground motions against which the Japanese nuclear plants were reviewed were expected to result from earthquakes that were smaller, but were much closer to the sites. The NRC does not currently have information on the maximum tsunami height that was expected at the sites.

3) How high was the tsunami at the Fukushima nuclear plants?

The tsunami modeling team at the National Oceanic and Atmospheric Administration's Pacific Marine Environmental Lab have estimated the wave height just offshore to be approximately 8 meters in height at Fukushima Daiichi and approximately 7 meters in Fukushima Daini. This is based on recordings from NOAA's Deep-ocean Assessment and Reporting of Tsunamis (DART) buoys and a high resolution numerical model developed for the tsunami warning system. If plant recordings exist they were not yet provided to the NRC.

4) Was the damage to the Japanese nuclear plants mostly from the earthquake or the tsunami?

Because this event happened in Japan, it is hard for NRC staff to make the assessment necessary to understand exactly what happened at this time. In the nuclear plants there may have been some damage from the shaking, and the earthquake caused the loss of offsite power. However, the tsunami appears to have played a key role in the loss of other power sources at the site producing station blackout, which is a critical factor in the ongoing problems.

5) Have any lessons for US nuclear plants been identified?

The NRC is in the process of following and reviewing the event in real time. This will undoubtedly lead to the identification of issues that warrant further study. However, a complete understanding of lessons learned will require more information than is currently available to NRC staff.

6) Was there any damage to US reactors from either the earthquake or the resulting tsunami?

No.

7) How many US reactors are located in active earthquake zones?

Although we often think of the US as having "active" and "non-active" earthquake zones, earthquakes can actually happen almost anywhere. Seismologists typically separate the US into low, moderate, and high seismicity zones. The NRC requires that every nuclear plant be designed for site-specific ground motions that are appropriate for their locations. In addition, the NRC has specified a minimum ground motion level to which nuclear plants must be designed.

8) What level of earthquake hazard are the US reactors designed for?

Each reactor is designed for a different ground motion that is determined on a site-specific basis. The existing nuclear plants were designed on a "deterministic" or "scenario earthquake" basis that accounted for the largest earthquakes expected in the area around the plant, without consideration of the likelihood of the earthquakes considered. New reactors are designed using probabilistic techniques that characterize both the ground motion levels and uncertainty at the proposed site. These probabilistic techniques account for the ground motions that may result from all potential seismic sources in the region around the site. Technically speaking, this is the ground motion with an annual frequency of occurrence of $1x10^{-4}$/year, but this can be thought of as the ground motion that occurs every 10,000 years on average. One important aspect is that probabilistic hazard and risk-assessment techniques account for beyond-design basis events. NRC's Generic Issue 199 (GI-199) project is using the latest probabilistic techniques used for new nuclear plants to review the safety of the existing plants. [see questions 16 to 21 for more information about GI-199]

9) What magnitude earthquake are currently operating US nuclear plants designed to?

Ground motion is a function of both the magnitude of an earthquake and the distance from the fault to the site. Nuclear plants, and in fact all engineered structures, are actually designed based on ground motion levels, not earthquake magnitudes. The existing nuclear plants were designed based on a "deterministic" or "scenario earthquake" basis that accounted for the largest earthquakes expected in the area around the plant. A margin is further added to the predicted ground motions to provide added robustness.

10) Have events in Japan changed our perception of earthquake risk to the nuclear plants in the US?

The NRC continues to determine that US nuclear plants are safe. This does not change the NRC's perception of earthquake hazard (i.e., ground motion levels) at US nuclear plants. It is too early to tell what the lessons from this earthquake are. The NRC will look closely at all aspects of response of the plants to the earthquake and tsunami to determine if any actions need to be taken in US nuclear plants and if any changes are necessary to NRC regulations.

11) Can significant damage to a nuclear plant like we see in Japan happen in the US due to an earthquake? Are the Japanese nuclear plants similar to US nuclear plants?

All US nuclear plants are built to withstand environmental hazards, including earthquakes and tsunamis. Even those nuclear plants that are located within areas with low and moderate seismic activity are designed for safety in the event of such a natural disaster. The NRC requires that safety-significant structures, systems, and components be designed to take into account even rare and extreme seismic

and tsunami events. In addition to the design of the plants, significant effort goes into emergency response planning and accident management. This approach is called defense-in-depth.

The Japanese facilities are similar in design to some US facilities. However, the NRC has required modifications to the plants since they were built, including design changes to control hydrogen and pressure in the containment. The NRC has also required plants to have additional equipment and measures to mitigate damage stemming from large fires and explosions from a beyond-design-basis event. The measures include providing core and spent fuel pool cooling and an additional means to power other equipment on site.

12) What is the likelihood of the design basis or "SSE" ground motions being exceeded over the life of a nuclear plant?

The ground motions that are used as seismic design bases at US nuclear plants are called the Safe Shutdown Earthquake ground motion (SSE). In the mid to late 1990s, the NRC staff reviewed the potential for ground motions beyond the design basis as part of the Individual Plant Examination of External Events (IPEEE). From this review, the staff determined that seismic designs of operating nuclear plants in the US have adequate safety margins for withstanding earthquakes. Currently, the NRC is in the process of conducting GI-199 to again assess the resistance of US nuclear plants to earthquakes. Based on NRC's analyses to date, the probability of ground motions exceeding the SSE for the plants in the Central and Eastern United States is less than 2%, with values ranging from a low of 0.1% to a high of 6%.

It is important to remember that structures, systems and components are required to have "adequate margin," meaning that they must continue be able withstand shaking levels that are above the plant's design basis.

13) Which reactors are along coastal areas that could be affected by a tsunami?

Many nuclear plants are located in coastal areas that could potentially be affected by a tsunami. Two nuclear plants, Diablo Canyon and San Onofre, are on the Pacific Coast, which is known to have a tsunami hazard. Two nuclear plants on the Gulf Coast, South Texas and Crystal River, could also be affected by tsunami. There are many nuclear plants on the Atlantic Coast or on rivers that may be affected by a tidal bore resulting from a tsunami. These include St. Lucie, Turkey Point, Brunswick, Oyster Creek, Millstone, Pilgrim, Seabrook, Calvert Cliffs, Salem/Hope Creek, and Surry. Tsunami on the Gulf and Atlantic Coasts occur, but are very rare. Generally the flooding anticipated from hurricane storm surge exceeds the flooding expected from a tsunami for nuclear plants on the Atlantic and Gulf Coast. Regardless, all nuclear plants are designed to withstand a tsunami.

14) What is magnitude anyway? What is the Richter Scale? What is intensity?

An earthquake's magnitude is a measure of the strength of the earthquake as determined from seismographic observations. Magnitude is essentially an objective, quantitative measure of the size of an earthquake. The magnitude can be expressed in various ways based on seismographic records (e.g., Richter Local Magnitude, Surface Wave Magnitude, Body Wave Magnitude, and Moment Magnitude). Currently, the most commonly used magnitude measurement is the Moment Magnitude, Mw, which is based on the strength of the rock that ruptured, the area of the fault that ruptured, and the average amount of slip. Moment magnitude is, therefore, a direct measure of the energy released during an earthquake. Because of the logarithmic basis of the scale, each whole number increase in magnitude represents a tenfold increase in measured amplitude; as an estimate of energy, each whole number step

in the magnitude scale corresponds to the release of about 31 times more energy than the amount associated with the preceding whole number value.

The Richter magnitude scale was developed in 1935 by Charles F. Richter of the California Institute of Technology and was based on the behavior of a specific seismograph that was manufactured at that time. The instruments are no longer in use and the magnitude scale is, therefore, no longer used in the technical community. However, the Richter Scale is a term that is so commonly used by the public that scientists generally just answer questions about "Richter" magnitude by substituting moment magnitude without correcting the misunderstanding.

The intensity of an earthquake is a qualitative assessment of effects of the earthquake at a particular location. The intensity assigned is based on observed effects on humans, on human-built structures, and on the earth's surface at a particular location. The most commonly used scale in the US is the Modified Mercalli Intensity (MMI) scale, which has values ranging from I to XII in the order of severity. MMI of I indicates an earthquake that was not felt except by a very few, whereas MMI of XII indicates total damage of all works of construction, either partially or completely. While an earthquake has only one magnitude, intensity depends on the effects at each particular location.

15) How do magnitude and ground motion relate to each other?

The ground motion experienced at a particular location is a function of the magnitude of the earthquake, the distance from the fault to the location of interest, and other elements such as the geologic materials through which the waves pass.

16) What is Generic Issue 199 about?

GI-199 investigates the safety and risk implications of updated earthquake-related data and models. These data and models suggest that the probability for earthquake ground motion above the seismic design basis for some nuclear plants in the Central and Eastern United States, although is still low, is larger than previous estimates.

17) Does GI-199 provide rankings of US nuclear plants in terms of safety?

The NRC does not rank nuclear plants by seismic risk. The objective of the GI-199 Safety/Risk Assessment was to perform a conservative, screening-level assessment to evaluate if further investigations of seismic safety for operating reactors in the central and eastern US (CEUS) are warranted, consistent with NRC directives. The results of the GI-199 safety risk assessment should not be interpreted as definitive estimates of plant-specific seismic risk because some analyses were very conservative making the calculated risk higher than in reality. The nature of the information used (both seismic hazard data and plant-level fragility information) make these estimates useful only as a screening tool.

18) What are the current findings of GI-199?

Currently operating nuclear plants in the US remain safe, with no need for immediate action. This determination is based on NRC staff reviews of updated seismic hazard information and the conclusions of the first stage of GI-199. Existing nuclear plants were designed with considerable margin to be able to withstand the ground motions from the "deterministic" or "scenario earthquake" that accounted for the largest earthquakes expected in the area around the plant. The results of the GI-199 assessment demonstrate that the probability of exceeding the design basis ground motion may have increased at some sites, but only by a relatively small amount. In addition, the probabilities of seismic core damage are lower than the guidelines for taking immediate action. Although there is not an immediate safety

concern, the NRC is focused on assuring safety during even very rare and extreme events. Therefore, the NRC has determined that assessment of updated seismic hazards and plant performance should continue.

19) What do you mean by "increased estimates of seismic hazards" at nuclear plant sites?

Seismic hazard (earthquake hazard) represents the chance (or probability) that a specific level of ground motion could be observed or exceeded at a given location. Our estimates of seismic hazard at some Central and Eastern United States locations have changed based on results from recent research, indicating that earthquakes occurred more often in some locations than previously estimated. Our estimates of seismic hazard have also changed because the models used to predict the level of ground motion, as caused by a specific magnitude earthquake at a certain distance from a site, changed. The increased estimates of seismic hazard at some locations in the Central and Eastern United States were discussed in a memorandum to the Commission, dated July 26, 2006. (The memorandum is available in the NRC Agencywide Documents Access and Management System [ADAMS] under Accession No. ML052360044).

20) Does the Seismic Core Damage represent a measurement of the risk of radiation release or only the risk of core damage (not accounting for additional containment)?

Seismic core damage frequency is the probability of damage to the core resulting from a seismic initiating event. It does not imply either a meltdown or the loss of containment, which would be required for radiological release to occur. The likelihood of radiation release is far lower.

21) Where can I get current information about Generic Issue 199?

The public NRC Generic Issues Program (GIP) website (http://www.nrc.gov/about-nrc/regulatory/gen-issues.html) contains program information and documents, background and historical information, generic issue status information, and links to related programs. The latest Generic Issue Management Control System quarterly report, which has regularly updated GI-199 information, is publicly available at http://www.nrc.gov/reading-rm/doc-collections/generic-issues/quarterly/index.html. Additionally, the US Geological Survey provides data and results that are publicly available at http://earthquake.usgs.gov/hazards/products/conterminous/2008/.

22) Could an accident sequence like the one at Japan's Fukushima Daiichi nuclear plants happen in the US?

It is difficult to answer this question until we have a better understanding of the precise problems and conditions that faced the operators at Fukushima Daiichi. We do know, however, that Fukushima Daiichi Units 1-3 lost all offsite power and emergency diesel generators. This situation is called "station blackout." US nuclear power plants are designed to cope with a station blackout event that involves a loss of offsite power and onsite emergency power. The Nuclear Regulatory Commission's detailed regulations address this scenario. US nuclear plants are required to conduct a "coping" assessment and develop a strategy to demonstrate to the NRC that they could maintain the plant in a safe condition during a station blackout scenario. These assessments, proposed modifications to the plant, and operating procedures were reviewed and approved by the NRC. Several plants added additional AC power sources to comply with this regulation.

In addition, US nuclear plant designs and operating practices since the terrorist events of September 11, 2001, are designed to mitigate severe accident scenarios such as aircraft impact, which include the complete loss of offsite power and all on-site emergency power sources.

US nuclear plant designs include consideration of seismic events and tsunamis'. It is important not to extrapolate earthquake and tsunami data from one location of the world to another when evaluating these natural hazards. These catastrophic natural events are very region- and location-specific, based on tectonic and geological fault line locations.

U.S.NRC

United States Nuclear Regulatory Commission

Protecting People and the Environment

Couret, Ivonne

From: Burnell, Scott
Sent: Monday, March 21, 2011 12:32 PM
To: Couret, Ivonne
Cc: Bowman, Eric
Subject: FW: Technical assumptions for 50 miles exclusion zone Fukushima

Thanks Eric, that'll go into our public inquiry file.

From: Bowman, Eric
Sent: Monday, March 21, 2011 12:28 PM
To: Burnell, Scott
Subject: FW: Technical assumptions for 50 miles exclusion zone Fukushima

Scott,

I received this inquiry over the weekend regarding press release 11-050. Would you be the appropriate point of contact to address this? I believe she chose to send it to me since I am the technical POC for the recent IN 2011-05.

Thanks!

Eric

Eric E. Bowman
Sr. Project Manager
Generic Communications & Power Uprate Branch
Division of Policy and Rulemaking
Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
301-415-2963
Eric.Bowman@nrc.gov

From: (b)(6)
Sent: Saturday, March 19, 2011 10:49 AM
To: Bowman, Eric
Subject: Technical assumptions for 50 miles exclusion zone Fukushima

I would like to understand the basis for the "50 miles sheltering zone" recommendation of the NRC around Fukushima.
Is it the nuclear explosion of the 9 source terms on site?
Is it the nuclear explosion of one 850 MW reactor?
Something else?

To my knowledge, the attachment 11-050 gives NO scientific/technical basic assumptions for its computerized calculations.
Thanks for your response.
Catherine GAUJACQ
(b)(6)

000401

From: Gloria Goodale
To: Uselding, Lara
Subject: RE: Christian Science Monitor looking to speak to expert....
Date: Monday, March 21, 2011 8:30:44 PM

Hello Ms. Uselding,

Thank you for your response. Can you explain what the NRC is doing to increase safety at the two California nuclear power plants in the wake of the plant failures in Japan? What additional seismic or tsunami-related measures are being considered in the licensing process? Specifically, with respect to the power failures at the Japanese plant, how much safer are the two California plantsthan the Japanese facilities? Thank you, Gloria

?

Gloria Goodale
Staff Writer
The Christian Science monitor
Office: 818.905.5571
Cell: (b)(6)
Email (b)(6)
Website: **csmonitor.com**
Address: 13239 Bloomfield St.
Sherman Oaks, CA 91423

From: Uselding, Lara [mailto:Lara.Uselding@nrc.gov]
Sent: Monday, March 21, 2011 1:30 PM
To: gcgoodale@aol.com
Subject: FW: Christian Science Monitor looking to speak to expert....

Hello please let me know what specific questions you have about SONGS. I'm not clear what you mean by "facing questions with their emergency prep".

As for the NRC and our recent communications with the licensee,

On Feb. 11, NRC sent a letter to Southern California Edison (SCE) stating that the NRC has determined that SCE has satisfied the terms of the Confirmatory Order it was issued back in 2008 involving falsification of fire watch records.

This is another indication of improvement at the site. There are other signs of improvement:

- In December 2010, the NRC closed a white finding that returned Unit 2 to Column 1. Both units are in column 1 or the licensee response column. (means they operated safely and will receive the baseline inspections)

- We feel they are making progress addressing the PI&R (problem identification and resolution) cross-cutting issue but will continue to receive enhanced oversight to ensure they address other areas that need improvement. We have seen enhancements in their corrective actions.

Lara Uselding
U.S. Nuclear Regulatory Commission (NRC)

000402

Public Affairs - Region IV

Lara.Uselding@nrc.gov
For more information visit **www.nrc.gov**

2. ENERGY/TODAY: How Safe Are the California Nuclear Power Plants? -- Christian Science Monitor Deadline: Mar 21, 2011 01:00 PM PST

2. ENERGY/TODAY: How Safe Are the California Nuclear Power Plants? -- Christian Science Monitor TOP^

I'm seeking experts to discuss the safety issues surrounding the San Onofre and Diablo Canyon nuclear power plants in California -- they have been cited for safety issues and are facing questions about their disaster preparedness. What are the biggest concerns and how quickly could and should they be addressed? What are the lessons from the Japanese plant failures? E-mail responses are welcome. Contact: Gloria Goodale, (b)(6)

Click Here to reply from your ProfNet Inbox

Opportunity Details

Submitted by:	Gloria Goodale
Organization:	Christian Science Monitor
Deadline:	Mar 21, 2011 01:00 PM PST(America/Los_Angeles)
Email address:	**gcgoodale@aol.com**

From: Uselding, Lara
To: (b)(6)
Subject: FW: Interview Request France 24
Date: Monday, March 21, 2011 4:21:00 PM
Attachments: Accréditation 2011 France 24 Clément Massé.doc

Hello Clemente: We are the federal agency that regulates nuclear power plants. We do not own or operate plants and our office is in Arlington TX. Is there something we can assist you with from here? I can respond to any questions you may have.

To go to the plant, you would have to have permission from the plant owner, Southern California Edison (SCE) and/or contact them for an interview.

Lara Uselding
U.S. Nuclear Regulatory Commission (NRC)
Public Affairs - Region IV

Lara.Uselding@nrc.gov
For more information visit www.nrc.gov

From: CLEMENT MASSE (b)(6)
Sent: Monday, March 21, 2011 3:21 PM
To: OPA Resource
Cc: CMProd
Subject: Interview Request France 24

Dear Sir,

I'm a Los Angeles based French journalist working for France 24, France's international 24/7 news television.

I'm working on a story on safety issues in California's nuclear plants, after Japan's nuclear crisis. I will be in San Onofre on Wednesday and was wondering if someone from the NRC in California would be available for an interview either Wednesday or Thursday.

In the attached folder, you will find my letter of credentials.

To find out more about France 24, please check our website: www.france24.com/en/about-france-24

Best,

Clément Massé

Clément Massé
France 24 correspondent in Los Angeles

Correspondant France 24 à Los Angeles
Phone: (310) 745-6881
E-mail: (b)(6)
or (b)(6)

000/403

www.france24.com/fr
www.france24.com/en
www.france24.com/ar

CERTIFICATE OF ACCREDITATION

I, hereby, undersigned Renée Kaplan, Deputy Editorial Director in-charge of English-language content at France 24, confirm that Clément MASSE (passport number (b)(6) from "Clément Massé Productions" is the correspondent in California for France 24 until December, 31, 2011.

I would be grateful if you could provide Clément MASSE with all accreditations necessary to the practice of his profession.

FRANCE 24 is France's premier 24-hour international news netowrk, broadcasting in English, French and Arabic and working with a worldwide network of correspondents.

For more information about FRANCE 24, please go to www.france24.com

Best regards,

Renée Kaplan
Directrice Adjointe de la Rédaction en charge des contenus anglophones
Deputy Editorial Director of the English Language Channel
FRANCE 24

From: Brenner, Eliot
To: McIntyre, David
Subject: RE: Press
Date: Monday, March 21, 2011 7:29:32 AM

For the record, do your magic thing with Bloomberg.

-----Original Message-----
From: McIntyre, David
Sent: Monday, March 21, 2011 6:54 AM
To: Brenner, Eliot
Subject: Press

Eliot - bloomberg is here and braving hail and high water. I haven't spoken to them yet but if they want an NRC quote before the briefing am I ok to provide? Or do we leave the field to Riccio and Gunter?

David McIntyre
NRC Office of Public Affairs
(b)(6)
301-415-8200 (office)

Sent from my BlackBerry, which is wholly respnsble for all typoos.

000404

From: OST01 HOC
Sent: Tuesday, March 22, 2011 1:37 AM
To: PMT02 Hoc; PMT11 Hoc; Hoc, PMT12
Subject: FW: 3/22, 14:00 SPEEDI Data
Attachments: FUKUSHIMA1 air concentrationüi14-15hüj.gif; FUKUSHIMA1 air concentrationüi15-16hüj.gif; FUKUSHIMA1 air concentrationüi16-17hüj.gif; FUKUSHIMA1 air doseüi14-15hüj.gif; FUKUSHIMA1 air doseüi15-16hüj.gif; FUKUSHIMA1 air doseüi16-17hüj.gif; FUKUSHIMA1 wind(14hüj.gif

-----Original Message-----
From: HOO Hoc [mailto:HOO.Hoc@nrc.gov]
Sent: Tuesday, March 22, 2011 1:36 AM
To: HOO Hoc; LIA07 Hoc; OST01 HOC; OST02 HOC; OST03 HOC
Subject: FW: 3/22, 14:00 SPEEDI Data

From: JapanEmbassy, TaskForce[SMTP:JAPANEMBASSYTASKFORCE@STATE.GOV]
Sent: Tuesday, March 22, 2011 1:34:26 AM
(b)(6)

Subject: 3/22, 14:00 SPEEDI Data
Auto forwarded by a Rule

Attached please find 3/22, 14:00 SPEEDI Data.

SBU
This email is UNCLASSIFIED

Naomi Walcott
Emergency Action Officer
Japan Emergency Command Center
U.S. Embassy Tokyo

-----Original Message-----

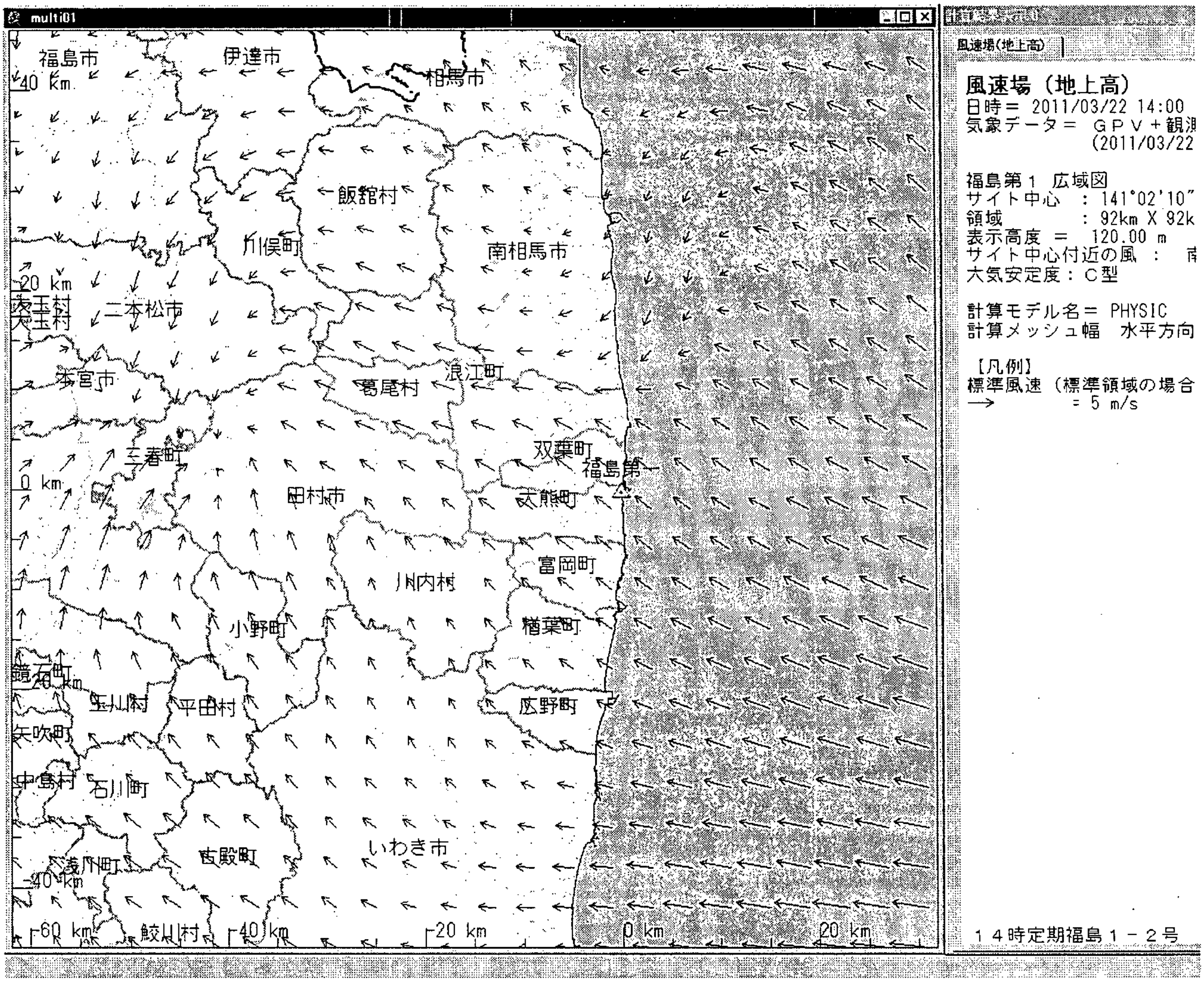
000405

From: nustec [mailto:spd01@nustec.or.jp]
Sent: Tuesday, March 22, 2011 2:32 PM
(b)(6)
Subject: 3/22　14時SPEEDI単位量放出図形イメージの送付

関係者各位

お世話になっております。
原子力安全技術センター　SPEEDI担当です。
３／２２　１４時のSPEEDI単位量放出図形のイメージデータを送付致します。
ご確認のほど、よろしくお願い致します。

Please find attached 14:00[22-Mar] SPEEDI Data
NUSTEC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相馬市
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葛尾村
浪江町
三春町
双葉町
福島第一
大熊町
田村市
富岡町
川内村
小野町
楢葉町
玉川村
平田村
広野町
矢吹町
中島村
石川町
古殿町
いわき市
浅川町
鮫川村
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-40 km
-20 km
20 km
風速場(地上高)
風速場（地上高）
日時＝ 2011/03/22 14:00
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(2011/03/22
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領域 ： 92km X 92k
表示高度 ＝ 120.00 m
サイト中心付近の風 ：
大気安定度：Ｃ型
計算モデル名＝ PHYSIC
計算メッシュ幅 水平方向
【凡例】
標準風速（標準領域の場合
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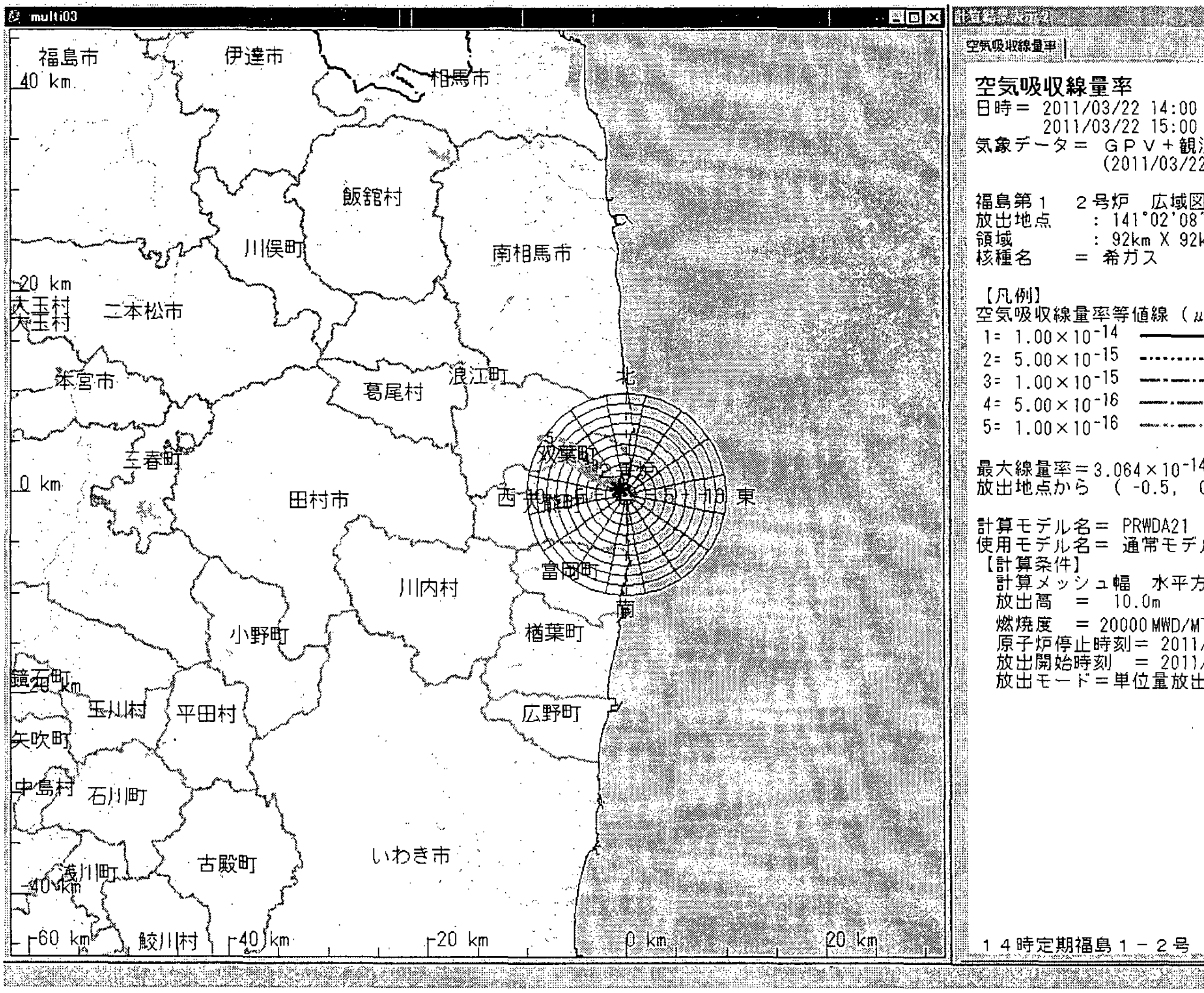
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飯舘村
川俣町
南相馬市
二本松市
大玉村
本宮市
葛尾村
浪江町
三春町
田村市
双葉町
大熊町
川内村
富岡町
小野町
楢葉町
鏡石町
玉川村
平田村
広野町
矢吹町
中島村
石川町
古殿町
いわき市
浅川町
鮫川村
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40 km
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空気吸収線量率
空気吸収線量率
日時＝ 2011/03/22 14:00
2011/03/22 15:00
気象データ＝ ＧＰＶ＋観測
(2011/03/22
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領域　　　　: 92km X 92k
核種名　　＝ 希ガス
【凡例】
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3= 1.00×10-15
4= 5.00×10-16
5= 1.00×10-16
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使用モデル名＝ 通常モデル
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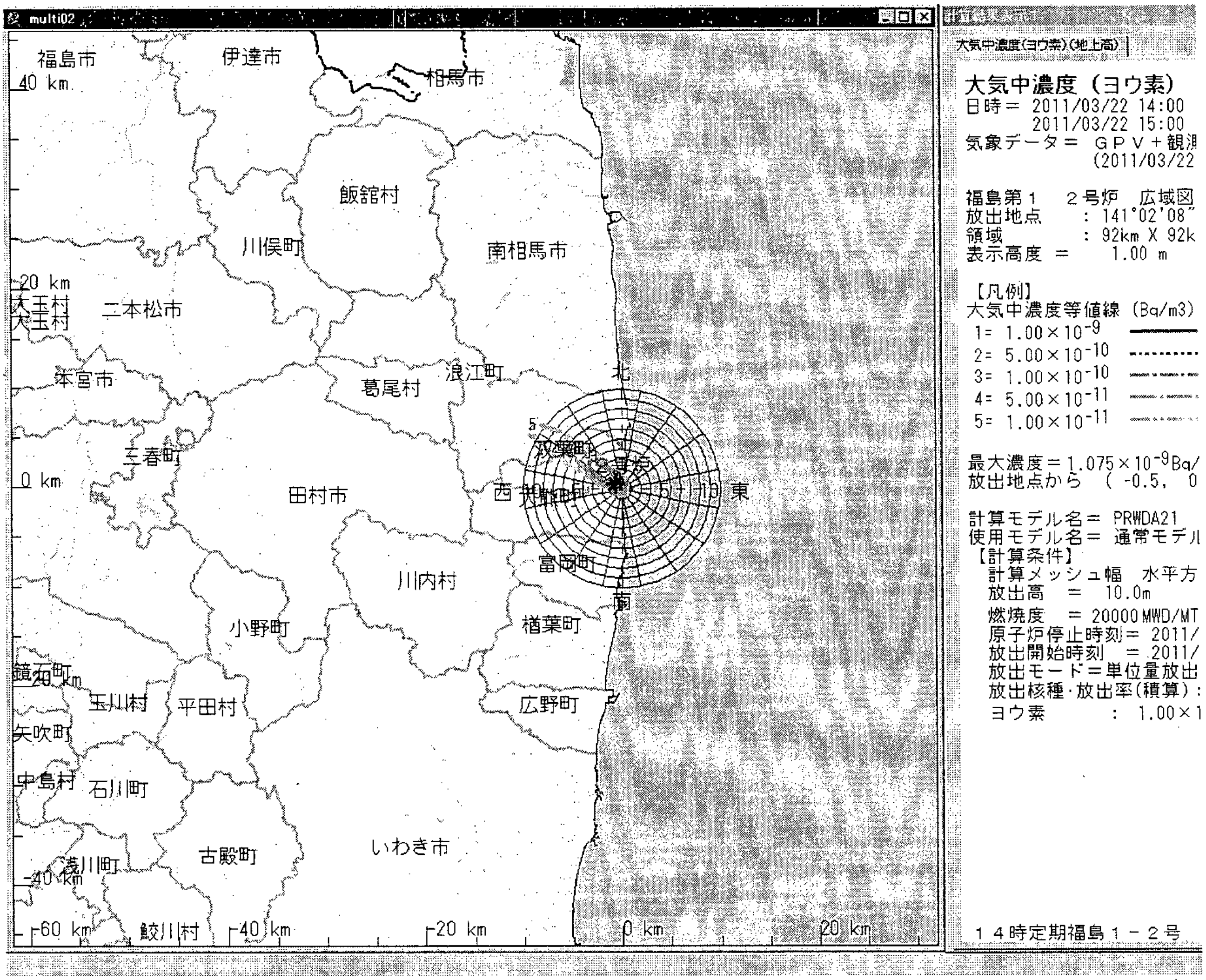
１４時定期福島１－２号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本宮市
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三春町
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楢葉町
鏡石町
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平田村
広野町
矢吹町
中島村
石川町
古殿町
いわき市
浅川町
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-60 km
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大気中濃度(ヨウ素)(地上高)
大気中濃度（ヨウ素）
日時＝ 2011/03/22 14:00
2011/03/22 15:00
気象データ＝ ＧＰＶ＋観測
(2011/03/22
福島第１　２号炉　広域図
放出地点　: 141°02'08"
領域　: 92km X 92k
表示高度 ＝ 1.00 m
【凡例】
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2= 5.00×10-10
3= 1.00×10-10
4= 5.00×10-11
5= 1.00×10-11
最大濃度＝1.075×10-9Bq/
放出地点から (-0.5, 0
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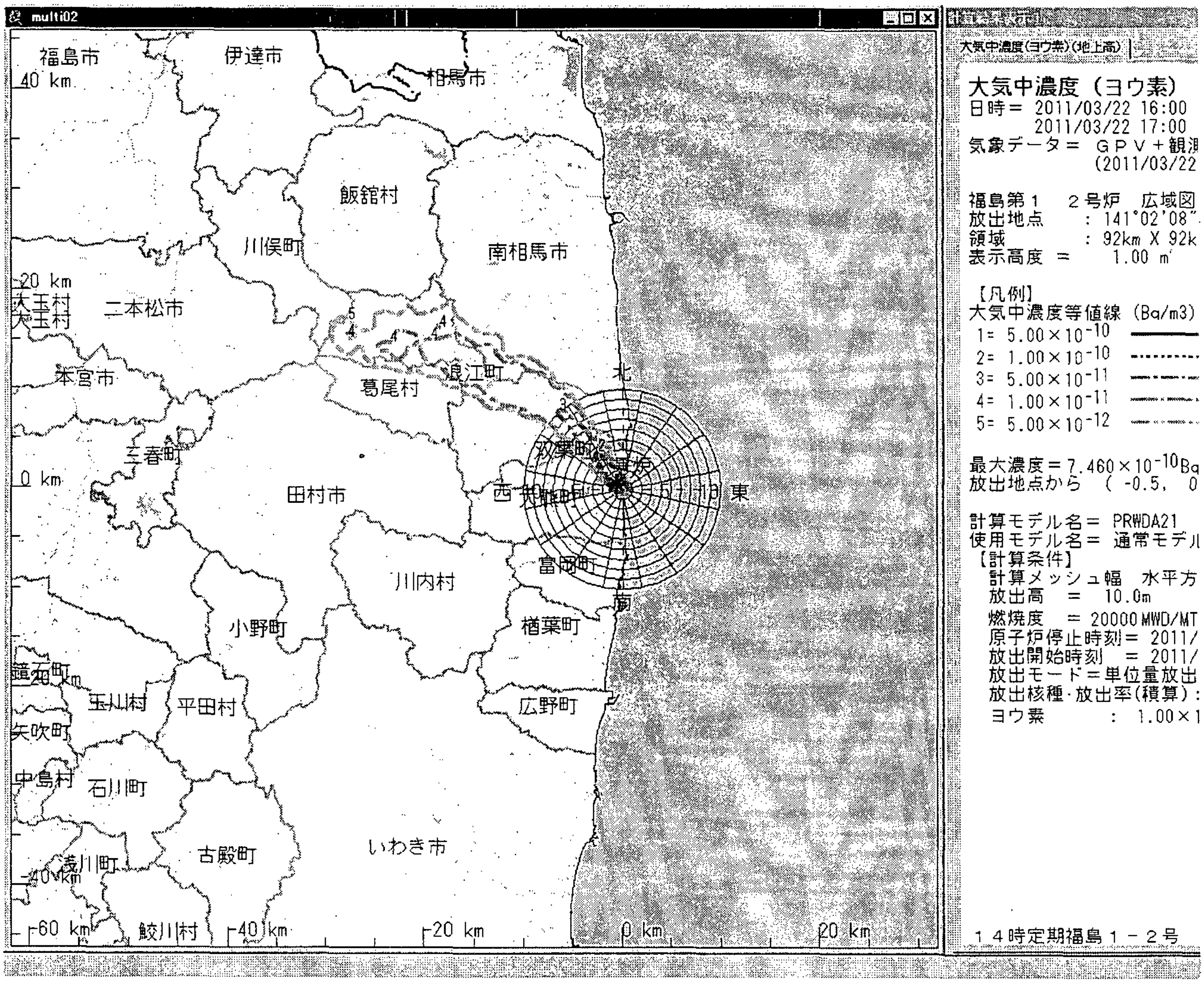
使用モデル名＝ 通常モデル
【計算条件】
計算メッシュ幅　水平方
放出高 ＝ 10.0m
燃焼度 ＝ 20000MWD/MT
原子炉停止時刻＝ 2011/
放出開始時刻 ＝ 2011/
放出モード＝単位量放出
放出核種・放出率(積算):
ヨウ素　: 1.00×1
１４時定期福島１－２号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伊達市
相馬市
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川俣町
南相馬市
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二本松市
本宮市
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葛尾村
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大熊町
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南
富岡町
川内村
楢葉町
小野町
玉川村
平田村
広野町
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中島村
石川町
古殿町
いわき市
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大気中濃度(ヨウ素)(地上高)
大気中濃度（ヨウ素）
日時＝ 2011/03/22 16:00
2011/03/22 17:00
気象データ＝ ＧＰＶ＋観測
(2011/03/22
福島第１　２号炉　広域図
放出地点　：141°02'08"
領域　：92km X 92k
表示高度 ＝　1.00 m
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大気中濃度等値線 (Bq/m3)
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2= 1.00×10^-10
3= 5.00×10^-11
4= 1.00×10^-11
5= 5.00×10^-12
最大濃度＝7.460×10^-10Bq
放出地点から　(-0.5,　0
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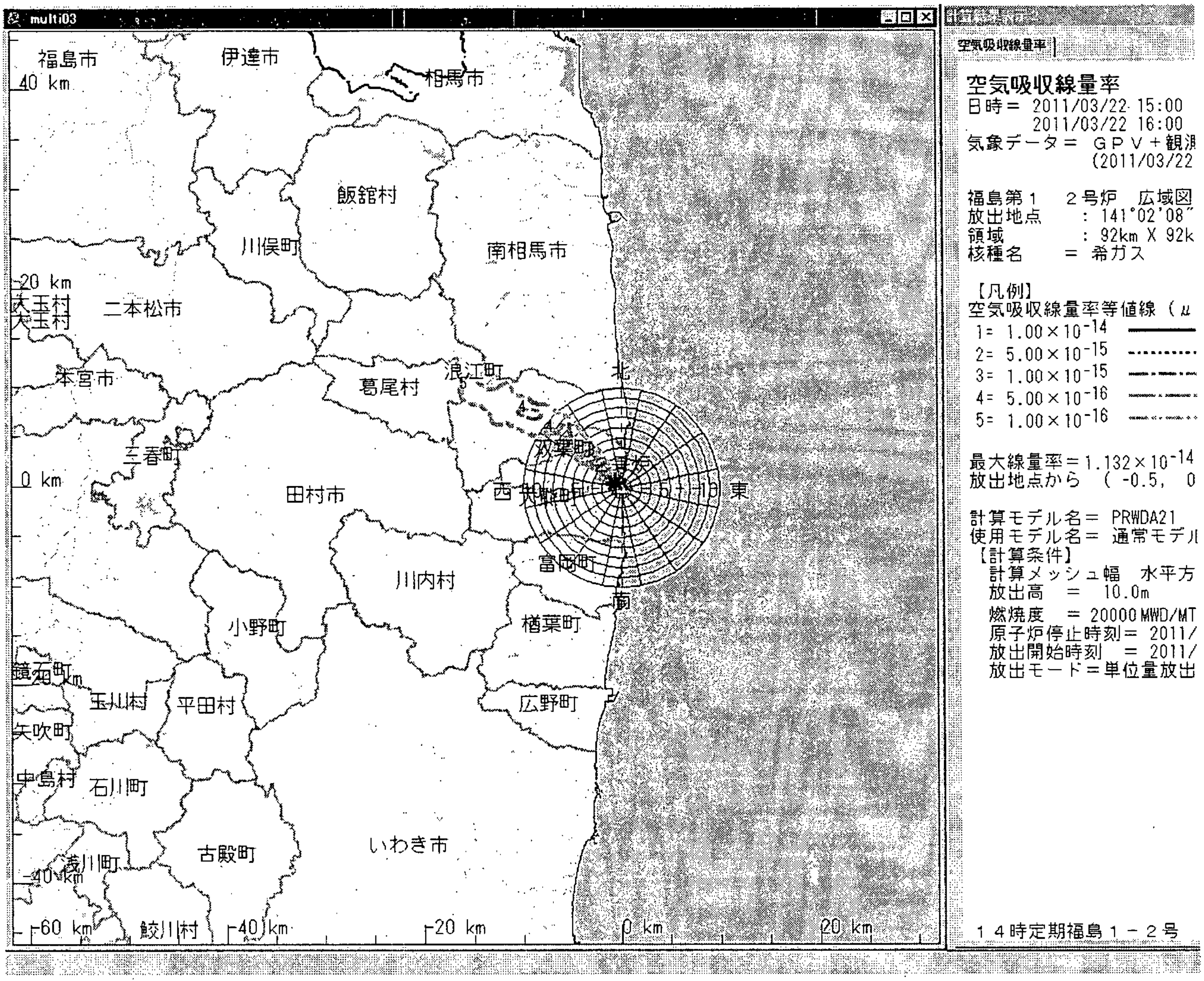
使用モデル名＝ 通常モデル
【計算条件】
計算メッシュ幅　水平方
放出高　＝　10.0m
燃焼度　＝ 20000 MWD/MT
原子炉停止時刻＝ 2011/
放出開始時刻　＝ 2011/
放出モード＝単位量放出
放出核種·放出率(積算)：
ヨウ素　：　1.00×1
１４時定期福島１－２号


multi03
空気吸収線量率
空気吸収線量率
日時＝ 2011/03/22 15:00
2011/03/22 16:00
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(2011/03/22
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放出地点　：141°02'08"
領域　：92km X 92k
核種名　＝ 希ガス
【凡例】
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2= 5.00×10-15
3= 1.00×10-15
4= 5.00×10-16
5= 1.00×10-16
最大線量率＝1.132×10-14
放出地点から　（-0.5,　0
計算モデル名＝ PRWDA21
使用モデル名＝ 通常モデル
【計算条件】
計算メッシュ幅　水平方
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燃焼度　＝ 20000 MWD/MT
原子炉停止時刻＝ 2011/
放出開始時刻　＝ 2011/
放出モード＝単位量放出
１４時定期福島１－２号
福島市
伊達市
相馬市
40 km
飯舘村
川俣町
南相馬市
20 km
大玉村
二本松市
本宮市
葛尾村
浪江町
北
三春町
双葉町
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田村市
西
東
川内村
富岡町
南
小野町
楢葉町
玉川村
平田村
広野町
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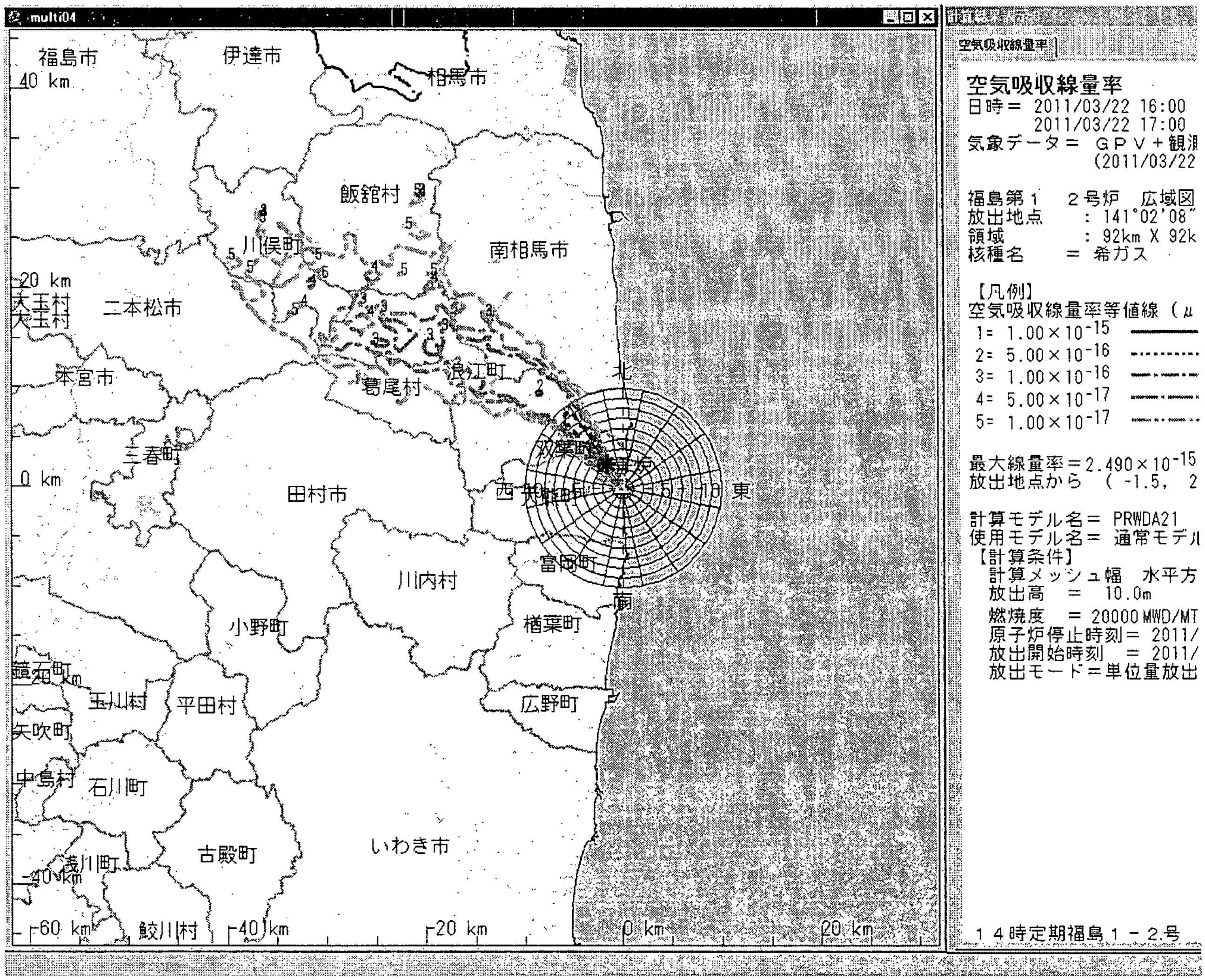
multi04
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伊達市
相馬市
飯舘村
川俣町
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楢葉町
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平田村
広野町
矢吹町
中島村
石川町
いわき市
古殿町
浅川町
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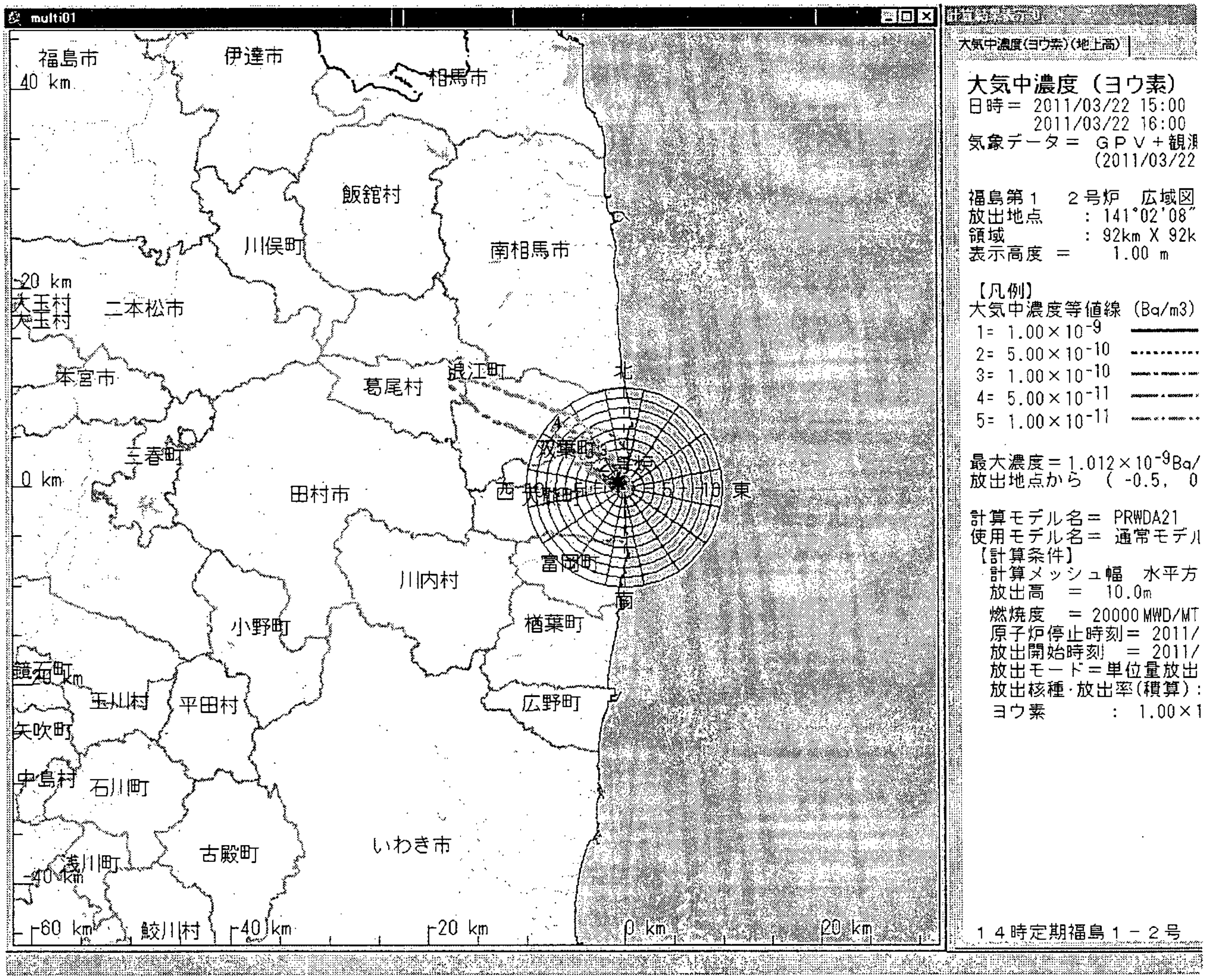
空気吸収線量率
空気吸収線量率
日時＝ 2011/03/22 16:00
2011/03/22 17:00
気象データ＝ ＧＰＶ＋観測
(2011/03/22
福島第１ ２号炉 広域図
放出地点 : 141°02'08"
領域 : 92km X 92k
核種名 ＝ 希ガス
【凡例】
空気吸収線量率等値線（μ
1= 1.00×10-15
2= 5.00×10-16
3= 1.00×10-16
4= 5.00×10-17
5= 1.00×10-17
最大線量率＝2.490×10-15
放出地点から （ -1.5， 2
計算モデル名＝ PRWDA21
使用モデル名＝ 通常モデル
【計算条件】
計算メッシュ幅 水平方
放出高 ＝ 10.0m
燃焼度 ＝ 20000 MWD/MT
原子炉停止時刻＝ 2011/
放出開始時刻 ＝ 2011/
放出モード＝単位量放出
１４時定期福島１－２号


multi01
福島市
伊達市
相馬市
40 km
飯舘村
川俣町
南相馬市
20 km
大玉村
二本松市
本宮市
浪江町
葛尾村
北
三春町
双葉町
0 km
田村市
西
東
富岡町
川内村
南
小野町
楢葉町
鏡石町
玉川村
平田村
広野町
矢吹町
中島村
石川町
古殿町
いわき市
浅川町
-40 km
-60 km
鮫川村
-40 km
-20 km
0 km
20 km
大気中濃度(ヨウ素)(地上高)
大気中濃度（ヨウ素）
日時＝ 2011/03/22 15:00
2011/03/22 16:00
気象データ＝ ＧＰＶ＋観測
(2011/03/22
福島第１　２号炉　広域図
放出地点　: 141°02'08"
領域　: 92km X 92k
表示高度 ＝ 1.00 m
【凡例】
大気中濃度等値線 (Bq/m3)
1= 1.00×10-9
2= 5.00×10-10
3= 1.00×10-10
4= 5.00×10-11
5= 1.00×10-11
最大濃度＝1.012×10-9Bq/
放出地点から (-0.5, 0
計算モデル名＝ PRWDA21
使用モデル名＝ 通常モデル
【計算条件】
計算メッシュ幅　水平方
放出高 ＝ 10.0m
燃焼度 ＝ 20000 MWD/MT
原子炉停止時刻＝ 2011/
放出開始時刻 ＝ 2011/
放出モード＝単位量放出
放出核種・放出率(積算):
ヨウ素　: 1.00×1
１４時定期福島１－２号

Weaver, Tonna

From: Bahadur, Sher
Sent: Tuesday, March 22, 2011 9:21 AM
To: Ruland, William
Subject: FW: Response - Message from Arnie Gundersen
Attachments: Japan event Q&As - additional info

Bill - This is yet another string of e-mails on Gundersen.

SHER BAHADUR; DEPUTY DIRECTOR, NRR/DSS
301-415-3283
sher.bahadur@nrc.gov

-----Original Message---
From: Dennig, Robert
Sent: Tuesday, March 22, 2011 9:06 AM
To: Lobel, Richard
Cc: Bahadur, Sher; Bettle, Jerome; Karipineni, Nageswara; Lee, Brian; Raval, Janak; Sallman, Ahsan; Torres, Roberto; Walker, Harold
Subject: FW: Response - Message from Arnie Gundersen

We're in standby per the following

-----Original Message---
From: Nelson, Robert
Sent: Tuesday, March 22, 2011 9:03 AM
To: Dennig, Robert
Cc: Blount, Tom
Subject: FYI: Response - Message from Arnie Gundersen

DORL will have for action consistent with this e-mail string.

NELSON

-----Original Message----
From: Blount, Tom
Sent: Monday, March 21, 2011 1:04 PM
To: Wittick, Brian; Jaegers, Cathy
Cc: Nelson, Robert; Boger, Bruce; McGinty, Tim; Quay, Theodore; Giitter, Joseph
Subject: FW: Response - Message from Arnie Gundersen

Brian/Cathy -
Please see the initiating e-mail below from Mr. Gundersen. I am requesting this be "Green Ticketed" for response. It does not meet the criteria for processing under the 2.206 or Proposed Rulemaking processes and should be treated as general correspondence. Consistent with Eric Leeds direction I believe this should be directed to Robert Nelson, NRR/DORL for his communications team to address.

Thanks,
Tom Blount,
NRR/DPR
415-5710

000/406

-----Original Message-----
From: Boger, Bruce
Sent: Monday, March 21, 2011 10:57 AM
To: Leeds, Eric; Weber, Michael; Wiggins, Jim
Cc: Blount, Tom; Grobe, Jack; Virgilio, Martin; Itzkowitz, Marvin; Ruland, William; McGinty, Tim
Subject: RE: Response - Message from Arnie Gundersen

We've considered Mr. Gundersen's letter from a 2.206 petition perspective. It doesn't appear to meet the entry conditions of seeking an enforcement action. However, to capture the letter in a formal process, we'll take steps to get it green ticketed.

-----Original Message-----
From: Leeds, Eric
Sent: Sunday, March 20, 2011 2:02 PM
To: Weber, Michael; Wiggins, Jim
Cc: Blount, Tom; Boger, Bruce; Grobe, Jack; Virgilio, Martin; Itzkowitz, Marvin; Ruland, William; McGinty, Tim
Subject: RE: Response - Message from Arnie Gundersen

Agreed. Could also be an OIG issue. NRR should take the lead - Tim/Tom, please followup.

Eric J. Leeds, Director
Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
301-415-1270

-----Original Message-----
From: Weber, Michael
Sent: Sunday, March 20, 2011 12:06 PM
To: Wiggins, Jim
Cc: Borchardt, Bill; Blount, Tom; Leeds, Eric; Boger, Bruce; Grobe, Jack; Virgilio, Martin; Itzkowitz, Marvin
Subject: Response - Message from Arnie Gundersen

Suggest it receive consideration as a 2.206 petition affecting BWR Mark I's.

----- Original Message -----
From: Wiggins, Jim
To: Weber, Michael; Hackett, Edwin
Cc: Borchardt, Bill; Blount, Tom; Leeds, Eric
Sent: Sun Mar 20 09:22:46 2011
Subject: RE: FYI - Message from Arnie Gundersen

Should this go into a system like 2.206 or PRM....?????

-----Original Message-----
From: Weber, Michael
Sent: Sunday, March 20, 2011 9:10 AM
To: Hackett, Edwin
Cc: Borchardt, Bill; Wiggins, Jim; Wittick, Brian
Subject: FYI - Message from Arnie Gundersen

Thanks, Ed

----- Original Message
From: Hackett, Edwin
To: Borchardt, Bill; Virgilio, Martin; Weber, Michael; Leeds, Eric; Ruland, William
Sent: Sun Mar 20 08:49:20 2011
Subject: FW: IMPORTANT-Please read ASAP

FYI - Concerns related to NPSH credit for BWR Mark 1's.

Ed

From: Arnie Gundersen (b)(6) On Behalf Of Arnie Gundersen (b)(6)
Sent: Saturday, March 19, 2011 7:42 AM
To: Hackett, Edwin; Batkin, Joshua
Subject: IMPORTANT-Please read ASAP

Dear Josh and Ed,

There will be many lessons to learn from Fukushima, but one is staring us in the face right now. The Mark 1 has a single point of vulnerability, and any Mark 1 with this vulnerability could become another Fukushima. It is the NPSH credit that the ACRS and NRC staff knowingly allowed BWR's to take when they received Uprates. A leak in containment, not a gross rupture, will render their ECCS inoperable. You both know this to be true without armies of analysts to confirm it. The NRC could easily demand any reactor that has taken the NPSH credit to reduce power to a level where that NPSH credit is no longer necessary. The NRC could do this by Monday morning. There will be more to learn, but let's start with what has been painfully obvious to many of us for too many years already.

Arnie Gundersen
Fairewinds Associates, Inc
arnie@fairewinds.com<mailto:arnie@fairewinds.com>
802-865-9955

"If a Secretary of Agriculture endorsed better meat inspection, you wouldn't have a debate of near religious fervor about whether that person was pro- or anti-meat, whether he had sold out to the vegetarians.

You'd debate whether the stricter regulations made sense. It's somehow unique to nuclear power that, when one refuses to have nuclear power on the industry's terms, one gets chucked into a bin labeled 'anti-nuclear.' "

-Peter A. Bradford, former Commissioner of the Nuclear Regulatory Commission. 3/9/82

From: OST01 HOC
Sent: Tuesday, March 22, 2011 5:33 AM
To: FOIA Response.hoc Resource
Subject: FW: 3/22　18時SPEEDI単位量放出図形イメージの送付

-----Original Message-----
From: HOO Hoc [mailto:HOO.Hoc@nrc.gov]
Sent: Tuesday, March 22, 2011 5:32 AM
To: HOO Hoc; LIA07 Hoc; OST01 HOC; OST02 HOC; OST03 HOC
Subject: FW: 3/22　18時SPEEDI単位量放出図形イメージの送付

From: JapanEmbassy, TaskForce[SMTP:JAPANEMBASSYTASKFORCE@STATE.GOV]
Sent: Tuesday, March 22, 2011 5:32:02 AM
(b)(6)
Subject: RE: 3/22　18時SPEEDI単位量放出図形イメージの送付
Auto forwarded by a Rule

Attached is the 3/22 1800 SPEEDI Data.

SBU
This email is UNCLASSIFIED

-----Original Message-----
From: nustec [mailto:spd01@nustec.or.jp]
Sent: Tuesday, March 22, 2011 6:25 PM

000/407

(b)(6)

Subject: 3/22　18時SPEEDI単位量放出図形イメージの送付

関係者各位

お世話になっております。
原子力安全技術センター　SPEEDI担当です。
３／２２　１８時のSPEEDI単位量放出図形のイメージデータを送付致します。
ご確認のほど、よろしくお願い致します。

Please find attached 18:00[22-Mar] SPEEDI Data
NUSTEC

From: OST01 HOC
Sent: Wednesday, March 30, 2011 12:49 AM
To: PMT02 Hoc; PMT11 Hoc; Hoc, PMT12
Cc: FOIA Response.hoc Resource
Subject: FW: 3/30; 13:00 SPEEDI Data
Attachments: FUKUSHIMA1 air concentrationüi13-14hüj.gif; FUKUSHIMA1 air concentrationüi14-15hüj.gif; FUKUSHIMA1 air concentrationüi15-16hüj.gif; FUKUSHIMA1 air doseüi13-14hüj.gif; FUKUSHIMA1 air doseüi14-15hüj.gif; FUKUSHIMA1 air doseüi15-16hüj.gif; FUKUSHIMA1 wind(13hüj.gif

-----Original Message-----
From: HOO Hoc [mailto:HOO.Hoc@nrc.gov]
Sent: Wednesday, March 30, 2011 12:41 AM
To: LIA07 Hoc; OST01 HOC; OST02 HOC; OST03 HOC
Subject: FW: 3/30; 13:00 SPEEDI Data

From: JapanEmbassy, TaskForce[SMTP:JAPANEMBASSYTASKFORCE@STATE.GOV]
Sent: Wednesday, March 30, 2011 12:38:00 AM
(b)(6)
[redacted]
Subject: 3/30; 13:00 SPEEDI Data
Auto forwarded by a Rule

Attached please find 3/30, 13:00 SPEEDI Data.

SBU
This email is UNCLASSIFIED

Naomi Walcott
Emergency Action Officer
Japan Emergency Command Center
U.S. Embassy Tokyo

-----Original Message-----
From: nustec [mailto:spd01@nustec.or.jp]
Sent: Wednesday, March 30, 2011 1:28 PM

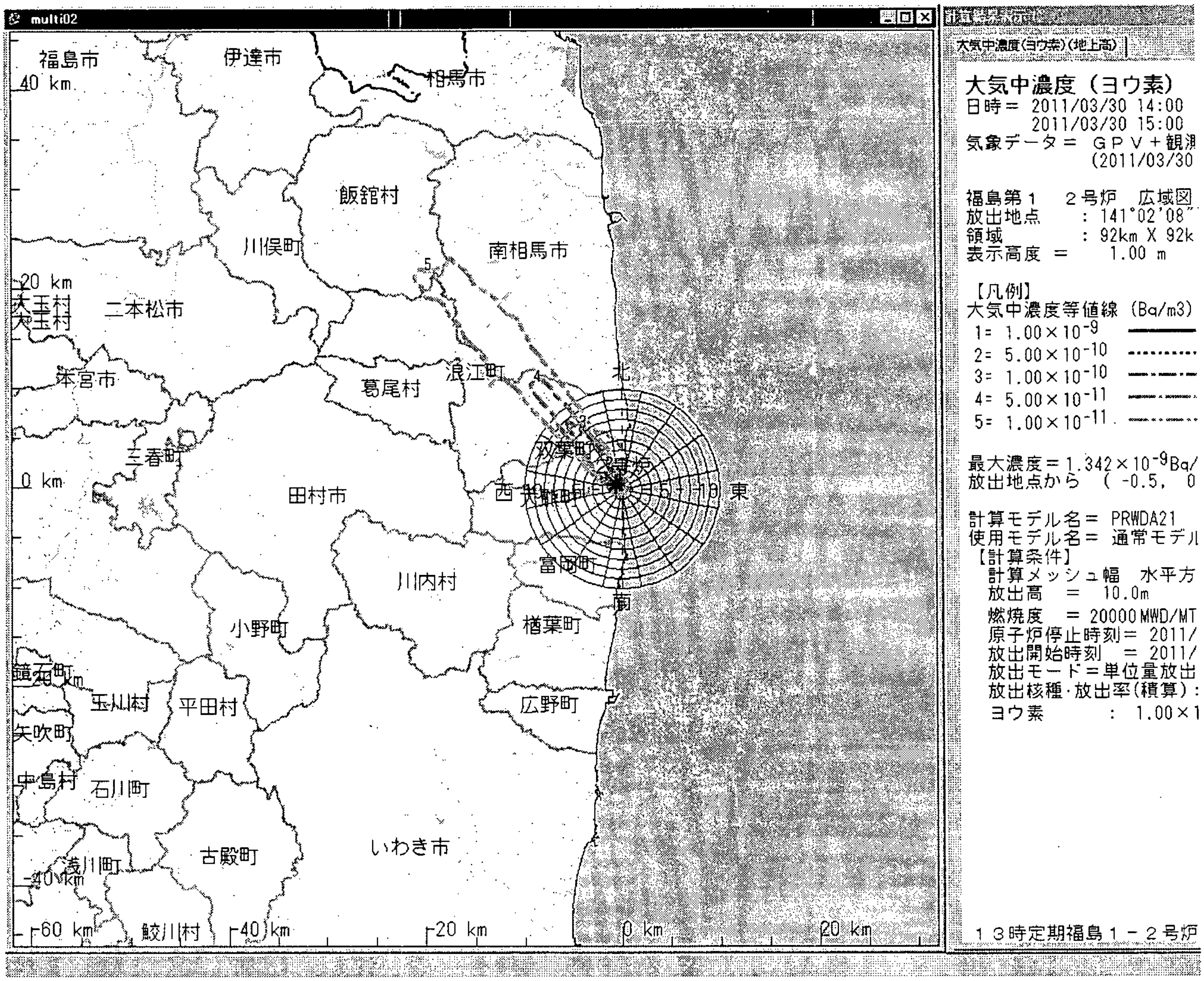
(b)(6)

Subject: 3/30　13時SPEEDI単位量放出図形イメージの送付

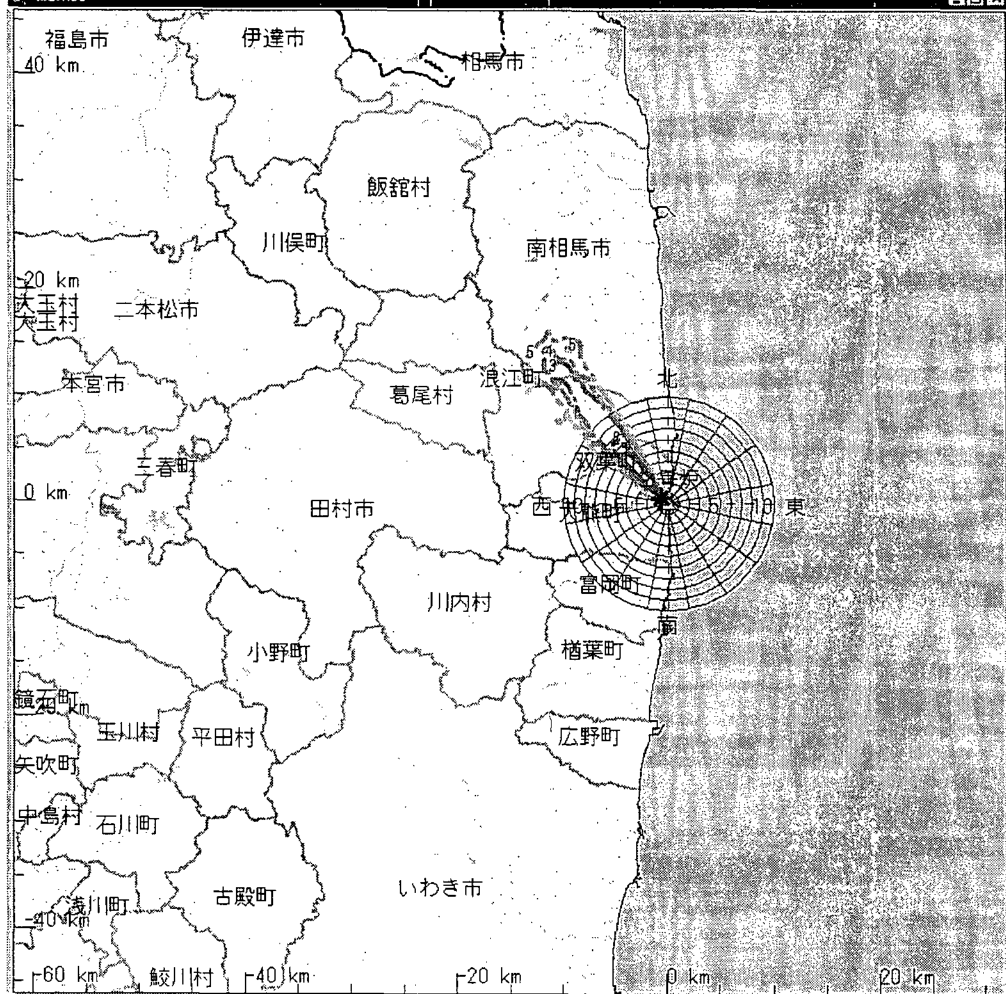
関係者各位

お世話になっております。
原子力安全技術センター　SPEEDI担当です。
3/30　13時のSPEEDI単位量放出図形のイメージデータを送付致します。
ご確認のほど、よろしくお願い致します。

Please find attached 13:00[30-Mar] SPEEDI Data
NUSTEC


multi02
福島市
伊達市
相馬市
40 km
飯舘村
川俣町
南相馬市
20 km
大玉村
二本松市
本宮市
浪江町
葛尾村
北
三春町
双葉町
0 km
田村市
西
東
川内村
富岡町
南
小野町
楢葉町
鏡石町
玉川村
平田村
広野町
矢吹町
中島村
石川町
古殿町
いわき市
浅川町
-40 km
60 km
鮫川村
40 km
20 km
0 km
20 km
大気中濃度(ヨウ素)(地上高)
大気中濃度（ヨウ素）
日時＝ 2011/03/30 14:00
2011/03/30 15:00
気象データ＝ ＧＰＶ＋観測
(2011/03/30
福島第１　２号炉　広域図
放出地点　：141°02'08"
領域　：92km X 92k
表示高度＝　1.00 m
【凡例】
大気中濃度等値線 (Bq/m3)
1= 1.00×10-9
2= 5.00×10-10
3= 1.00×10-10
4= 5.00×10-11
5= 1.00×10-11
最大濃度＝1.342×10-9Bq/
放出地点から（ -0.5, 0
計算モデル名＝ PRWDA21
使用モデル名＝ 通常モデル
【計算条件】
計算メッシュ幅　水平方
放出高　＝　10.0m
燃焼度　＝ 20000 MWD/MT
原子炉停止時刻＝ 2011/
放出開始時刻　＝ 2011/
放出モード＝単位量放出
放出核種・放出率(積算)：
ヨウ素　：　1.00×1
１３時定期福島１－２号炉

multi03



空気吸収線量率

空気吸収線量率

日時＝ 2011/03/30 13:00
2011/03/30 14:00
気象データ＝ ＧＰＶ＋観測
(2011/03/30

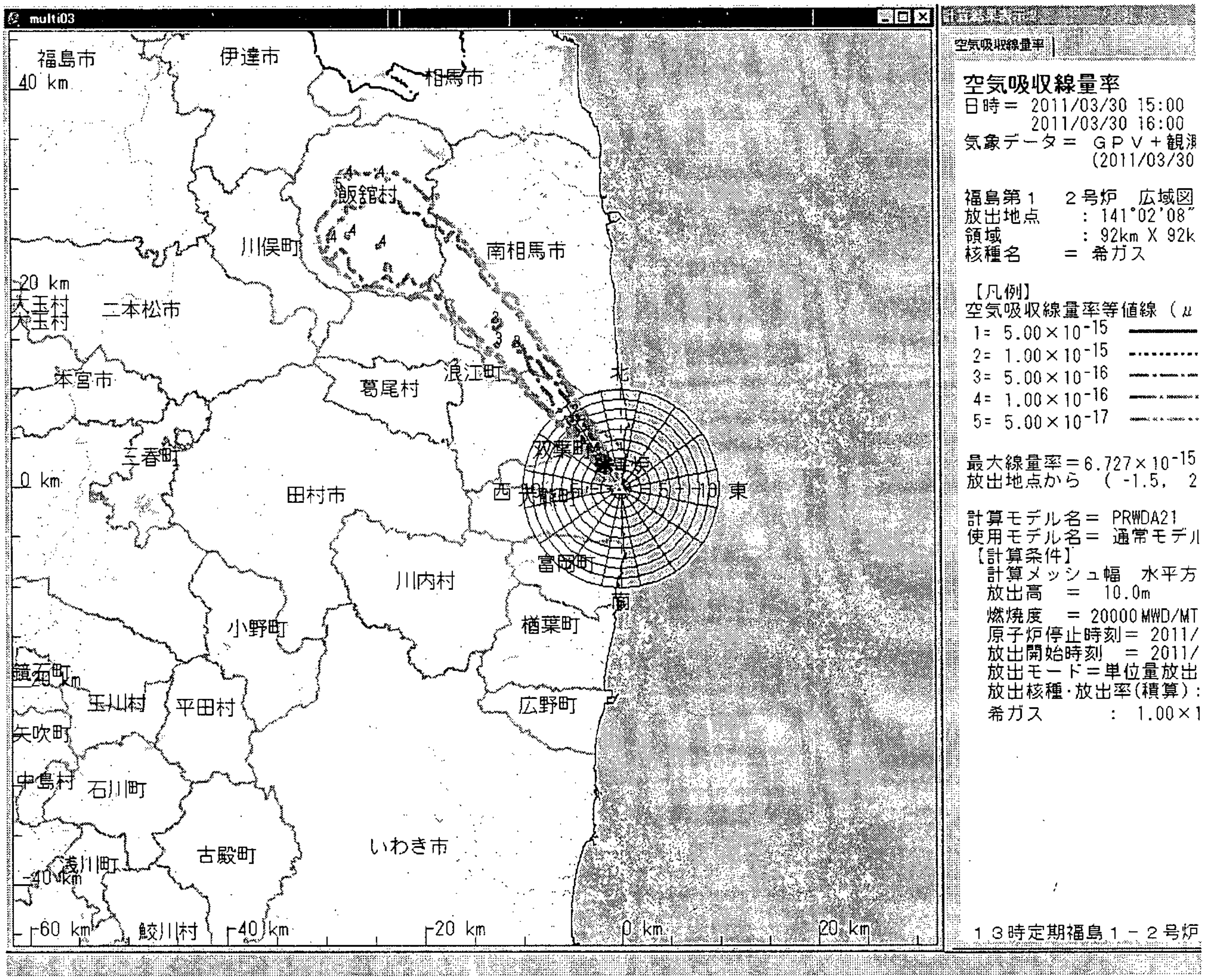
福島第１　２号炉　広域図
放出地点　　：141°02'08"
領域　　　　：92km X 92k
核種名　　＝ 希ガス

【凡例】
空気吸収線量率等値線（μ
1= 1.00×10^{-15}
2= 5.00×10^{-16}
3= 1.00×10^{-16}
4= 5.00×10^{-17}
5= 1.00×10^{-17}

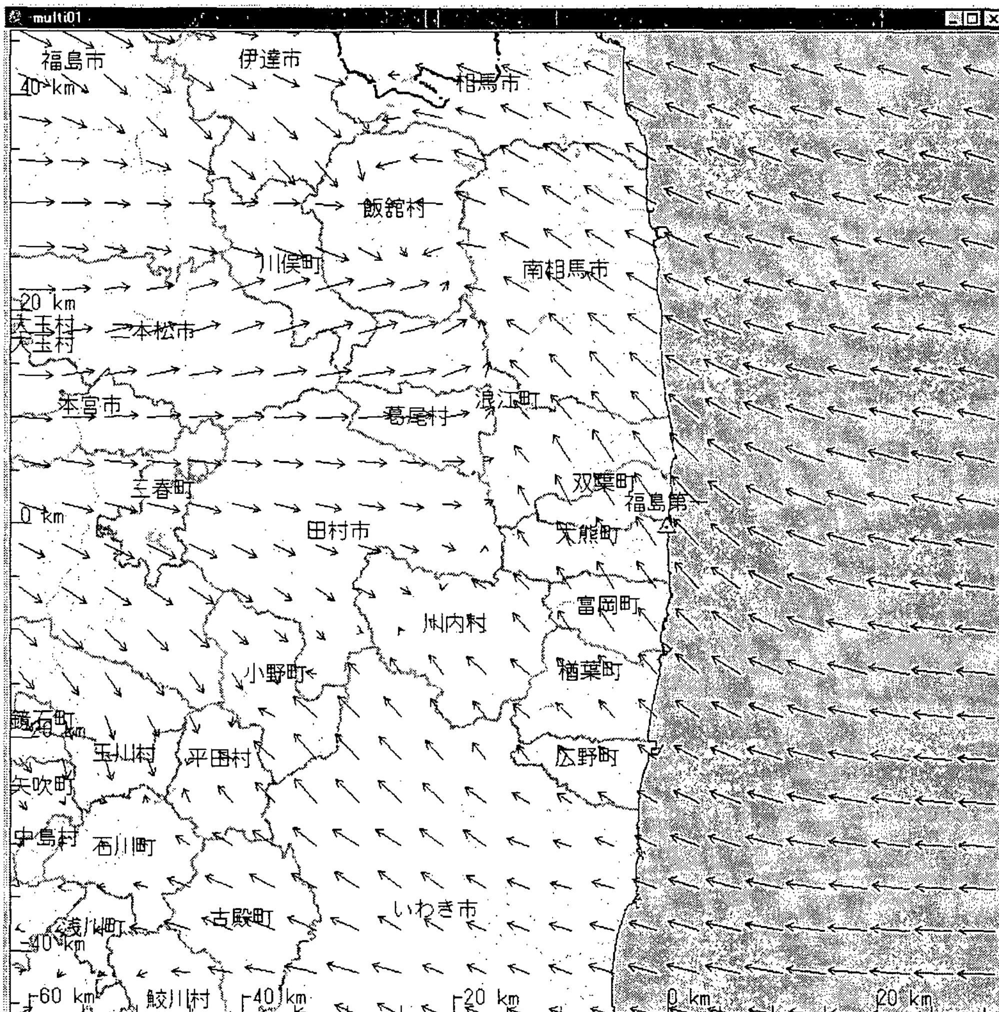
最大線量率＝4.968×10^{-15}
放出地点から　(-0.5,　0

計算モデル名＝ PRWDA21
使用モデル名＝ 通常モデル
【計算条件】
計算メッシュ幅　水平方
放出高　＝　10.0m
燃焼度　＝ 20000 MWD/MT
原子炉停止時刻＝ 2011/
放出開始時刻　＝ 2011/
放出モード＝単位量放出
放出核種・放出率(積算)：
希ガス　　　：　1.00×1

１３時定期福島１－２号炉


multi03
福島市
伊達市
相馬市
40 km
飯舘村
川俣町
南相馬市
20 km
大玉村
二本松市
本宮市
葛尾村
浪江町
北
三春町
双葉町
0 km
田村市
東
富岡町
川内村
南
小野町
楢葉町
鏡石町
玉川村
平田村
広野町
矢吹町
中島村
石川町
古殿町
いわき市
浅川町
鮫川村
60 km
40 km
20 km
0 km
20 km
空気吸収線量率
空気吸収線量率
日時＝ 2011/03/30 15:00
2011/03/30 16:00
気象データ＝ ＧＰＶ＋観測
(2011/03/30
福島第１ ２号炉 広域図
放出地点 : 141°02'08"
領域 : 92km X 92k
核種名 ＝ 希ガス
【凡例】
空気吸収線量率等値線（μ
1= 5.00×10-15
2= 1.00×10-15
3= 5.00×10-16
4= 1.00×10-16
5= 5.00×10-17
最大線量率＝6.727×10-15
放出地点から （ -1.5, 2
計算モデル名＝ PRWDA21
使用モデル名＝ 通常モデル
【計算条件】
計算メッシュ幅 水平方
放出高 ＝ 10.0m
燃焼度 ＝ 20000 MWD/MT
原子炉停止時刻＝ 2011/
放出開始時刻 ＝ 2011/
放出モード＝単位量放出
放出核種・放出率(積算):
希ガス : 1.00×1
１３時定期福島１－２号炉

multi01



風速場(地上高)

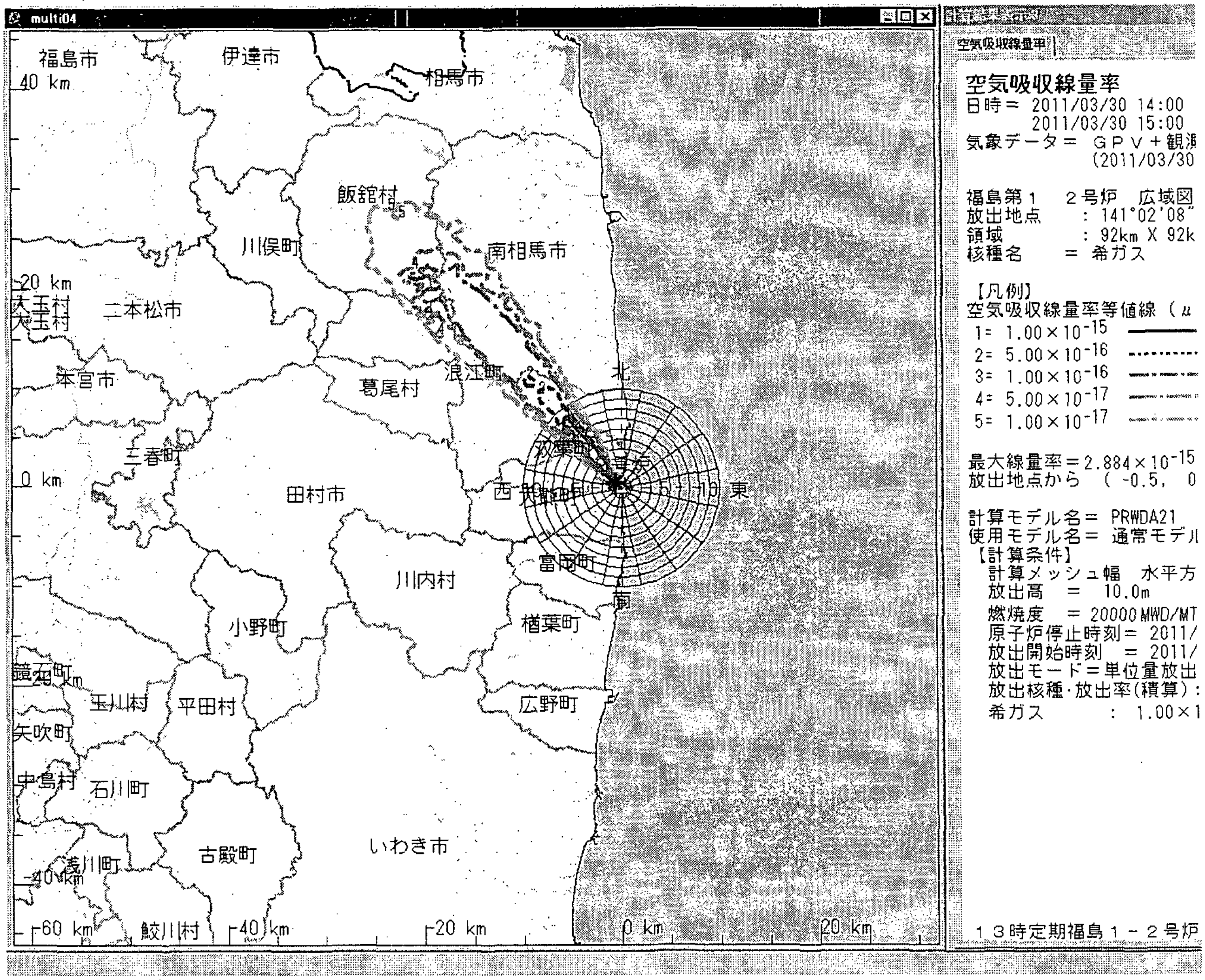
風速場（地上高）
日時＝ 2011/03/30 13:00
気象データ＝ ＧＰＶ＋観測
(2011/03/30

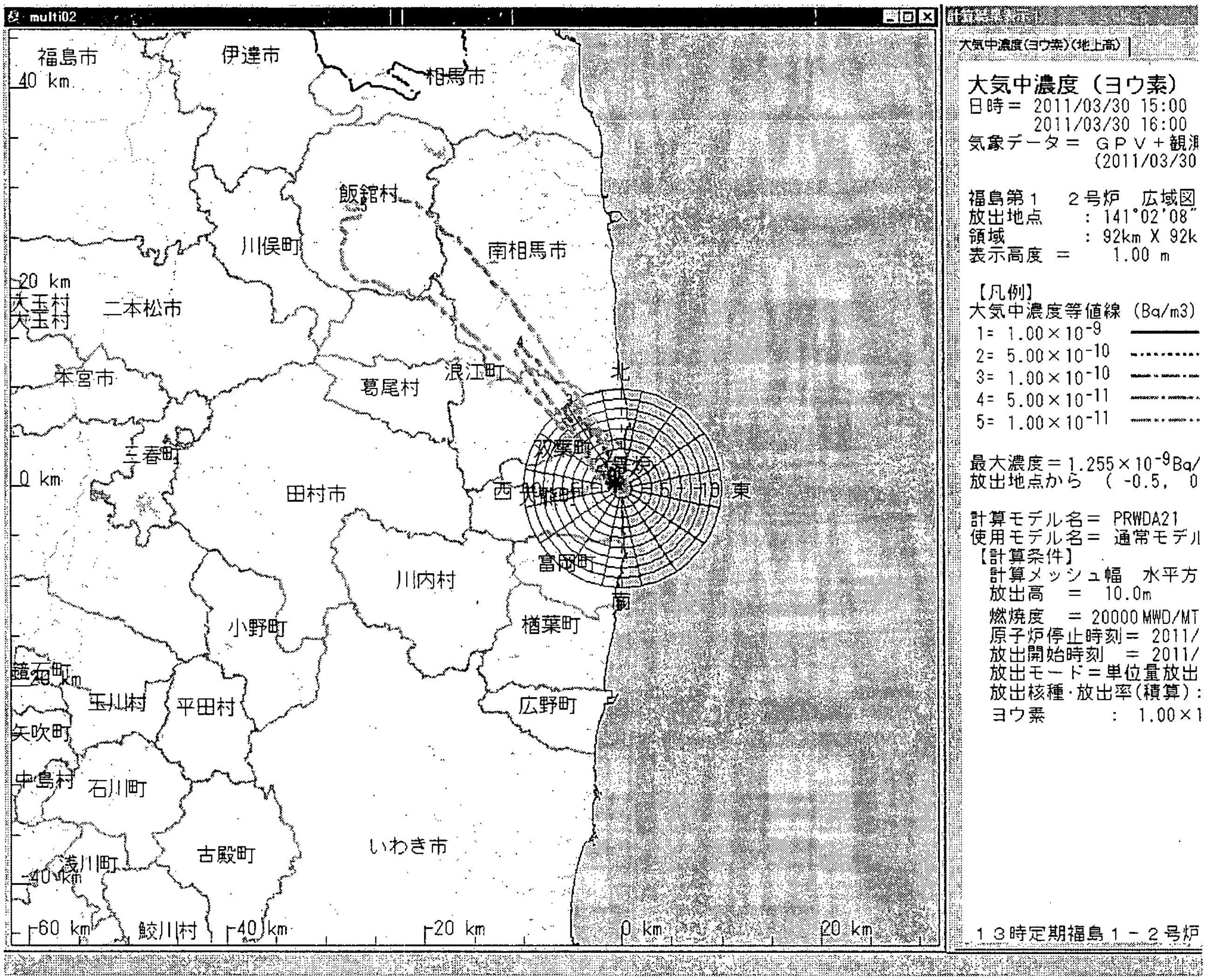
福島第１ 広域図
サイト中心 ： 141°02'10"
領域 ： 92km X 92k
表示高度 ＝ 120.00 m
サイト中心付近の風 ：
大気安定度：Ｃ型

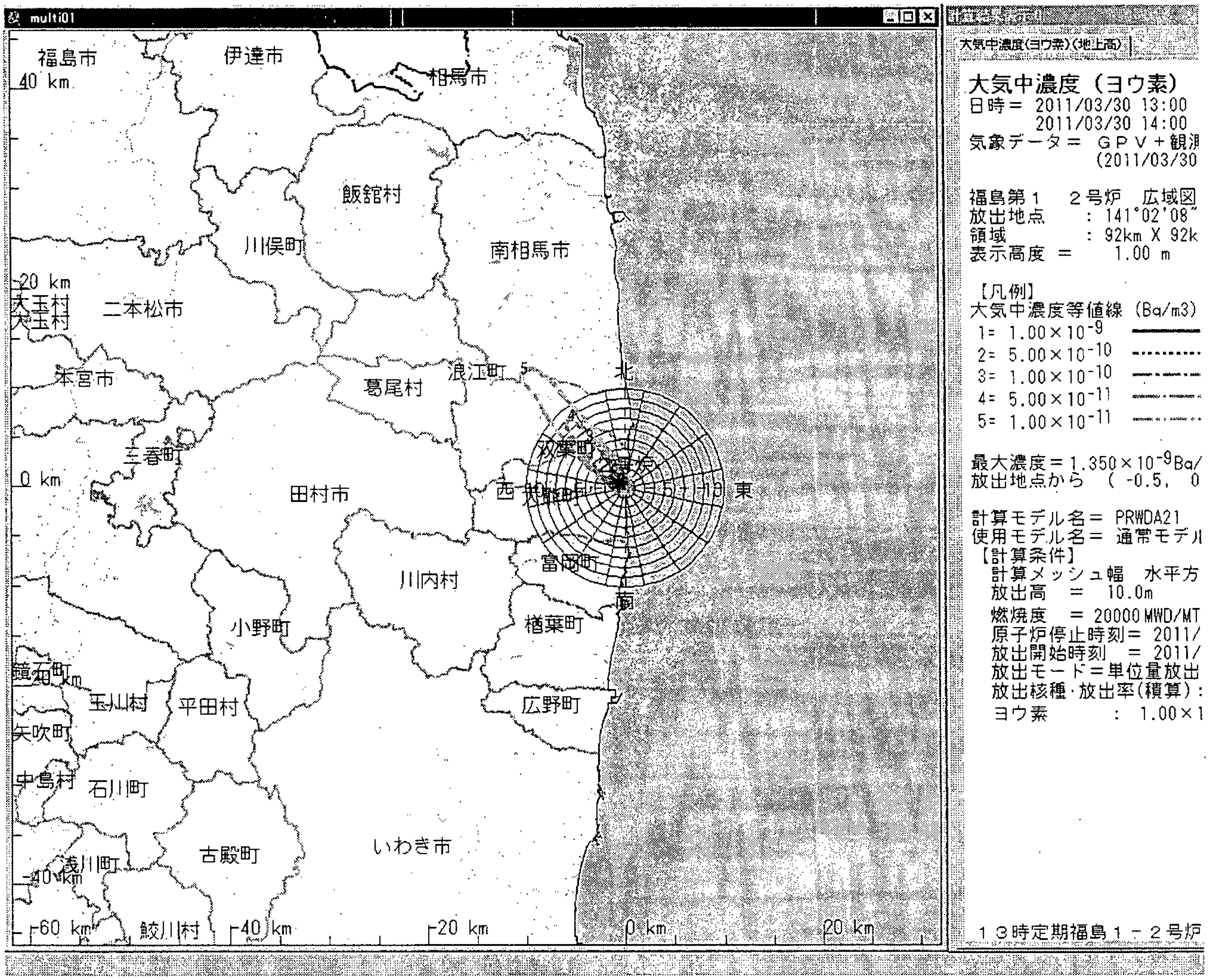
計算モデル名＝ PHYSIC
計算メッシュ幅 水平方向

【凡例】
標準風速（標準領域の場合
→ = 5 m/s

１３時定期福島１－２号炉


multi04
福島市
伊達市
相馬市
40 km
飯舘村
川俣町
南相馬市
20 km
大玉村
二本松市
本宮市
葛尾村
浪江町
北
三春町
双葉町
0 km
田村市
東
富岡町
川内村
南
小野町
楢葉町
玉川村
平田村
広野町
矢吹町
中島村
石川町
古殿町
いわき市
浅川町
-40 km
-60 km
鮫川村
-40 km
-20 km
0 km
20 km
空気吸収線量率
空気吸収線量率
日時＝ 2011/03/30 14:00
2011/03/30 15:00
気象データ＝ ＧＰＶ＋観測
(2011/03/30
福島第１ ２号炉 広域図
放出地点 : 141°02'08"
領域 : 92km X 92k
核種名 ＝ 希ガス
【凡例】
空気吸収線量率等値線（μ
1= 1.00×10-15
2= 5.00×10-16
3= 1.00×10-16
4= 5.00×10-17
5= 1.00×10-17
最大線量率＝2.884×10-15
放出地点から （ -0.5, 0
計算モデル名＝ PRWDA21
使用モデル名＝ 通常モデル
【計算条件】
計算メッシュ幅 水平方
放出高 ＝ 10.0m
燃焼度 ＝ 20000 MWD/MT
原子炉停止時刻＝ 2011/
放出開始時刻 ＝ 2011/
放出モード＝単位量放出
放出核種・放出率(積算)：
希ガス : 1.00×1
１３時定期福島１－２号炉


multi02
福島市
伊達市
相馬市
40 km
飯舘村
川俣町
南相馬市
20 km
大玉村
二本松市
本宮市
葛尾村
浪江町
北
三春町
双葉町
0 km
田村市
西
東
富岡町
川内村
南
小野町
楢葉町
玉川村
平田村
広野町
矢吹町
中島村
石川町
浅川町
古殿町
いわき市
鮫川村
-60 km
-40 km
-20 km
0 km
20 km
大気中濃度(ヨウ素)(地上高)
大気中濃度（ヨウ素）
日時＝ 2011/03/30 15:00
2011/03/30 16:00
気象データ＝ ＧＰＶ＋観测
(2011/03/30
福島第１　２号炉　広域図
放出地点　　: 141°02'08"
領域　　　　: 92km X 92k
表示高度 ＝　1.00 m
【凡例】
大気中濃度等値線 (Bq/m3)
1= 1.00×10-9
2= 5.00×10-10
3= 1.00×10-10
4= 5.00×10-11
5= 1.00×10-11
最大濃度＝1.255×10-9Bq/
放出地点から　(-0.5,　0
計算モデル名＝ PRWDA21
使用モデル名＝ 通常モデル
【計算条件】
計算メッシュ幅　水平方
放出高　＝　10.0m
燃焼度　＝ 20000 MWD/MT
原子炉停止時刻＝ 2011/
放出開始時刻　＝ 2011/
放出モード＝単位量放出
放出核種・放出率(積算):
ヨウ素　　　: 1.00×1
１３時定期福島１－２号炉


multi01
福島市
伊達市
相馬市
40 km
飯舘村
川俣町
南相馬市
20 km
大玉村
二本松市
本宮市
浪江町
葛尾村
三春町
0 km
田村市
北
双葉町
東
南
富岡町
川内村
小野町
楢葉町
玉川村
平田村
広野町
矢吹町
中島村
石川町
古殿町
いわき市
浅川町
鮫川村
60 km
40 km
20 km
0 km
20 km
大気中濃度(ヨウ素)(地上高)
大気中濃度（ヨウ素）
日時＝ 2011/03/30 13:00
2011/03/30 14:00
気象データ＝ ＧＰＶ＋観測
(2011/03/30
福島第１ ２号炉 広域図
放出地点 : 141°02'08"
領域 : 92km X 92k
表示高度 ＝ 1.00 m
【凡例】
大気中濃度等値線 (Bq/m3)
1= 1.00×10-9
2= 5.00×10-10
3= 1.00×10-10
4= 5.00×10-11
5= 1.00×10-11
最大濃度＝1.350×10-9Bq/
放出地点から (-0.5, 0
計算モデル名＝ PRWDA21
使用モデル名＝ 通常モデル
【計算条件】
計算メッシュ幅 水平方
放出高 ＝ 10.0m
燃焼度 ＝ 20000 MWD/MT
原子炉停止時刻＝ 2011/
放出開始時刻 ＝ 2011/
放出モード＝単位量放出
放出核種・放出率(積算)：
ヨウ素 : 1.00×1
１３時定期福島１－２号炉

Couret, Ivonne

From: Barkley, Richard
Sent: Tuesday, March 22, 2011 1:59 PM
To: Couret, Ivonne; Harrington, Holly; Virgilio, Rosetta
Subject: See the Attached Emergency Document Prepared by the Japanese Nuclear Regulator

http://www.nisa.meti.go.jp/english/files/en20110316-1.pdf

The simple graphics in this are great.

From: Carpenter, Gene
Sent: Tuesday, March 22, 2011 1:27 PM
To: Barkley, Richard; Adelstein, Patricia; Anderson, Brian; Bafundo Crimm, Nina; Bailey, Kenneth; BowdenBerry, Elva; Burton, William; Daniel, Richard; Fehst, Geraldine; Fuller, Michael; Glenn, Nichole; Heck, Jared; Kotra, Janet; Krsek, Robert; Leslie, Bret; Maier, Bill; Meeting_Facilitation Resource; Mroz (Sahm), Sara; Rakovan, Lance; Rivera, Alison; Rodriguez, Michael; Salter, Susan; Smith, George; Stuyvenberg, Andrew; Wright, Lisa (Gibney)
Subject: RE: Good Discusssion Today - Thanks for Such a Group Effort!!

FYI:

This is what our Japanese equivalent (NISA) is saying: http://www.nisa.meti.go.jp/english/index.html

Gene

From: Barkley, Richard
Sent: Tuesday, March 22, 2011 13:26
To: Adelstein, Patricia; Anderson, Brian; Bafundo Crimm, Nina; Bailey, Kenneth; Barkley, Richard; BowdenBerry, Elva; Burton, William; Carpenter, Gene; Daniel, Richard; Fehst, Geraldine; Fuller, Michael; Glenn, Nichole; Heck, Jared; Kotra, Janet; Krsek, Robert; Leslie, Bret; Maier, Bill; Meeting_Facilitation Resource; Mroz (Sahm), Sara; Rakovan, Lance; Rivera, Alison; Rodriguez, Michael; Salter, Susan; Smith, George; Stuyvenberg, Andrew; Wright, Lisa (Gibney)
Subject: Good Discusssion Today - Thanks for Such a Group Effort!!

http://www.nrc.gov/japan/japan-info.html

The above link takes you to the NRC's external website location for the events related to Japan. The agency has gone from having almost nothing on our website on Fukushima to a very healthy list of Frequently Asked Questions. I suspect the materials provided to the Regions in advance of their Annual Assessment Meetings will rely heavily on this material.

Richard S. Barkley, PE
Nuclear & Environmental Engineer
(610) 337-5065 Work
(b)(6)

000408

Couret, Ivonne

From: Barkley, Richard
Sent: Tuesday, March 22, 2011 1:49 PM
To: Couret, Ivonne; Mitlyng, Viktoria; Rakovan, Lance; Ryan, Michelle; Salter, Susan; Screnci, Diane; Steger (Tucci), Christine; Virgilio, Rosetta
Subject: FW: Good Discusssion Today - Thanks for Such a Group Effort!!

http://www.mext.go.jp/component/english/__icsFiles/afieldfile/2011/03/22/1303997_2219.pdf

Take a look at the cute Japanese radiological pictorial graph on Page 5 – We should use something like this going forward.

This information was forwarded from someone in Research, and has radiological data from Japan post-Fukushima.

At least the Japanese have been lucky in one big way – The wind at Fukushima Diaichi has been almost always out to sea.

Most of the readings outside of the 20 km radius around the plant (~12 miles) are less than 10 microsieverts per hour (= to 1 millirem/hour).

From: Carpenter, Gene
Sent: Tuesday, March 22, 2011 1:27 PM
To: Barkley, Richard; Adelstein, Patricia; Anderson, Brian; Bafundo Crimm, Nina; Bailey, Kenneth; BowdenBerry, Elva; Burton, William; Daniel, Richard; Fehst, Geraldine; Fuller, Michael; Glenn, Nichole; Heck, Jared; Kotra, Janet; Krsek, Robert; Leslie, Bret; Maier, Bill; Meeting_Facilitation Resource; Mroz (Sahm), Sara; Rakovan, Lance; Rivera, Alison; Rodriguez, Michael; Salter, Susan; Smith, George; Stuyvenberg, Andrew; Wright, Lisa (Gibney)
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From: Barkley, Richard
Sent: Tuesday, March 22, 2011 13:26
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Subject: Good Discusssion Today - Thanks for Such a Group Effort!!

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Richard S. Barkley, PE
Nuclear & Environmental Engineer
(610) 337-5065 Work
(b)(6)

Esmaili, Hossein

From: Lee, Richard
Sent: Tuesday, March 22, 2011 4:21 PM
To: Salay, Michael; Esmaili, Hossein
Cc: Powers, Dana A; Powers, Dana; Gauntt, Randall O
Subject: FW: How are you?
Attachments: Japan nuclear plants.doc

fyi

-----Original Message-----
From: (b)(6)
Sent: Tuesday, March 22, 2011 3:40 PM
To: Lee, Richard
Subject: Re: How are you?

Trying to age gracefully. Attached is my memo of how my reactors could have been saved.I sent it to Basu because I lost your email. Nice to hear from you.
Sol -----Original Message-----
From: Lee, Richard <Richard.Lee@nrc.gov>
To: slevy112 (b)(6)
Sent: Tue, Mar 22, 2011 11:17 am
Subject: How are you?

Hi, Sal: I see that your reactor designs been destroyed in Fukushi Dai-ichi. How are you and your family? Richard

000/409

Basu, Sudhamay

From: (b)(6)
Sent: Tuesday, March 22, 2011 3:10 PM
To: Basu, Sudhamay
Subject: Fukushima
Attachments: Japan nuclear plants.doc

This is my latest version. Pass it to our common friend in research because I do not his e-mail
Sol

<u>Potential Suggestions to Improve Responses to Japan Nuclear Plants. (Rev2, 3/22/11)</u>

<u>By Salomon Levy</u>

1. The Japan earthquake and tsunami exceeded the design values and appear to have impaired normal or emergency power supply. The ability to supply water to the reactor cores and spent fuel pools was apparently lost. All reactors were producing decay heat only with control rods inserted.

2. **The key objective of the recovery effort should have been and should still be to provide water to the reactor cores and the spent fuel pools as soon as possible and to use salt water if treated water or raw water were not available.**

3. The immediate actions after the earthquake and tsunami should have been to send personnel into all the units to assess the degree of damage to the ability to provide water and to report on all serious equipment damage and spent fuel water pools. At that point in time, the radiation level in the units should have been close to normal so personnel could carry out such inspections.

4. With the loss of power and of water supply ability, the next urgent action should have been to ask the government to fly by helicopters fire pumps and fuel supply to operate them in order to supply water (or salt water) to the reactor cores and spent fuel pools.

5. System engineers should have calculated the amount of time available to uncover the spent fuel pools. This should have been in the order of days since they have considerable water above the fuel (even if it was reduced by the earthquake) and the water has to vaporize. This should set the goal for replenishing them. All units should have been dealt with.

6. BWRs use a water suppression containment which has a drywell which isolates all major penetration by valves on the inside and outside of the drywell. Small penetrations such as instrument lines (including reactor water level lines to determine water level in the reactor) may not have check valves on them. Feedwater lines to supply water to the reactor also have check valves and are the best place to add water to the reactor core. During a loss of coolant accident, steam/water are released to the drywell and flow to the wetwell where they are quenched. Both the drywell and wetwell are inerted to avoid hydrogen-air chemical reactions. Any release of steam or high pressure water in the dry well increases the dry well pressure and it can reach the wet well half full with water through suppression pipes located at the bottom of the dry well which are submerged in the wet well water. When the wetwell pressure exceeds the drywell pressure, there is a vent on the wetwell to return gas to the wetwell and to equalize wetwell-drywell pressure, thus containing any hydrogen release within the containment system No release outside the containment is necessary until the containment design pressure is reached. The BWR containment has the advantage of reducing the pressure in the containment after an accident, and filtering the fission products released from the fuel through the wet well water. After the TMI-2 accident, the U. S. NRC demanded that half of the zirconium fuel cladding would get hot and react with water to produce hydrogen. In order to cope with that decision,

Howe, Allen

From: Howe, Allen
Sent: Tuesday, March 22, 2011 5:49 PM
To: Wittick, Brian; Meighan, Sean; Leeds, Eric; Grobe, Jack; Boger, Bruce; Nguyen, Quynh; Galloway, Melanie; Holian, Brian; Giitter, Joseph; Brown, Frederick; Cheok, Michael; McGinty, Tim; Blount, Tom; Ruland, William; Bahadur, Sher; Lubinski, John; Evans, Michele; Hiland, Patrick; Skeen, David; Lee, Samson
Subject: RE: DRAFT SRM - COMGBJ-11-0002 (NRC Actions Following the Events in Japan)

Brian – no comments.

Allen

From: Wittick, Brian
Sent: Tuesday, March 22, 2011 5:12 PM
To: Meighan, Sean; Leeds, Eric; Grobe, Jack; Boger, Bruce; Nguyen, Quynh; Galloway, Melanie; Holian, Brian; Giitter, Joseph; Howe, Allen; Brown, Frederick; Cheok, Michael; McGinty, Tim; Blount, Tom; Ruland, William; Bahadur, Sher; Lubinski, John; Evans, Michele; Hiland, Patrick; Skeen, David; Lee, Samson
Subject: FW: DRAFT SRM - COMGBJ-11-0002 (NRC Actions Following the Events in Japan)
Importance: High

Sean,

Attached please find the subject draft SRM put out this afternoon. As noted, comments are requested today. Please let me know soonest if NRR has comments.

Thanks
Brian Wittick
Executive Technical Assistant for Reactors
Office of the Executive Director for Operations
U.S. Nuclear Regulatory Commission
301-415-2496 (w); (b)(6) (c)

From: RidsEdoDraftSrmVote Resource
Sent: Tuesday, March 22, 2011 1:58 PM
To: Ash, Darren; Borchardt, Bill; Boyd, Lena; Buckley, Patricia; Clarke, Deanna; Cohen, Miriam; EDO_Staff_Assistants; Flory, Shirley; Fry, Jeannie; Garland, Stephanie; Johnson, Michael; Mamish, Nader; Matakas, Gina; Miles, Patricia; Miller, Charles; Owen, Lucy; Riddick, Nicole; RidsAdmMailCenter Resource; RidsCsoMailCenter Resource; RidsFsmeOd Resource; RidsHrMailCenter Resource; RidsNmssOd Resource; RidsNroMailCenter Resource; RidsNrrOd Resource; RidsNsirMailCenter Resource; RidsOeMailCenter Resource; RidsOiMailCenter Resource; RidsOIS Resource; RidsResOd Resource; RidsRgn1MailCenter Resource; RidsRgn2MailCenter Resource; RidsRgn3MailCenter Resource; RidsRgn4MailCenter Resource; RidsSbcrMailCenter Resource; Thomas, Loretta; Virgilio, Martin; Walker, Dwight; Weber, Michael
Subject: FW: DRAFT SRM - COMGBJ-11-0002 (NRC Actions Following the Events in Japan)
Importance: High

From: Wright, Darlene
Sent: Tuesday, March 22, 2011 1:19 PM
To: Baggett, Steven; Bates, Andrew; Batkin, Joshua; Bavol, Rochelle; Blake, Kathleen; Bozin, Sunny; Bradford, Anna; Bubar, Patrice; Bupp, Margaret; Burns, Stephen; Chairman Temp; Clark, Lisa; Coggins, Angela; Cordes, John; Crawford, Carrie; Davis, Roger; Fopma, Melody; Franovich, Mike; Gibbs, Catina; Hackett, Edwin; Hart, Ken; Harves, Carolyn; Henderson, Karen; Herr, Linda; Hipschman, Thomas; Hudson, Sharon; Joosten, Sandy; KLS Temp; Kock, Andrea; Laufer, Richard; Lepre, Janet; Loyd, Susan; Mamish, Nader; Marshall, Michael; Monninger, John; Moore, Scott; Orders, William; Pace, Patti; Poole, Brooke; Reddick, Darani; RidsEdoDraftSrmVote Resource; Rothschild, Trip; Savoy, Carmel; Sharkey,

000|410

Jeffry; Shea, Pamela; Snodderly, Michael; Sosa, Belkys; Speiser, Herald; Svinicki, Kristine; Temp, GEA; Temp, WCO; Temp, WDM; Thoma, John; Vietti-Cook, Annette; Warren, Roberta; Zorn, Jason; Tadesse, Rebecca; Joosten, Sandy; Castleman, Patrick; Montes, David; Dhir, Neha; Adler, James; Jimenez, Patricia; Muessle, Mary; Nieh, Ho; Ostendorff, William; Warnick, Greg; Apostolakis, George; Pearson, Laura; Lui, Christiana; Lisann, Elizabeth
Cc: Lewis, Antoinette
Subject: DRAFT SRM - COMGBJ-11-0002 (NRC Actions Following the Events in Japan)
Importance: High

The attached file contains a draft SRM which is being circulated for Commission review. Your response is requested as soon as practical today. As provided in the Internal Commission Procedures, the staff is "...afforded an opportunity to review the SRM to ensure that the Commission decision is clear and understandable and that resource, schedular, and legal constraints are properly considered." Please provide any responses to Ken Hart (KRH), Richard Laufer (RJL), Rochelle Bavol (RCB5), and Pam Shea (PWS).

Weaver, Tonna

From: Case, Michael
Sent: Tuesday, March 22, 2011 7:14 AM
To: Bacuta, George C Jr MVN; Rosenberg, Stacey
Cc: Imboden, Andy; Attard, Anthony; Mendiola, Anthony
Subject: RE: Atlantic Ocean Tsunamis
Attachments: RE: (Action) Tsunami Fact Sheet - NUREG issued in March 2009 Link

Thanks George. Attached is some info on some of our latest research on Tsunamis on the Atlantic side to support new reactor licensing.

-----Original Message-----
From: Bacuta, George C Jr MVN (b)(6)
Sent: Monday, March 21, 2011 10:46 AM
To: Rosenberg, Stacey
Cc: Imboden, Andy; Attard, Anthony; Mendiola, Anthony; Case, Michael
Subject: FW: Atlantic Ocean Tsunamis

Hi Stacey: Saw your pic at Operation Center, glad to know you are on the case. Saw the link also of NRC's FAQs on seismicity/subduction zones around CONUS.

You may want to add to address in a FAQ also on possible Atlantic tsunamis.
In particular are the October 11, 1918 Puerto Rico (historical) and possible those transform faults at the Cuba/Haiti(recent)-Dominican Republic plates or micro-plates. Puerto Rico's is related to subduction zone tectonics as well a dip component at the Haiti transform faults may render the power plants in Florida (Miami-Homestead/Turkey Point area and Indian Point?/Jupiter? Area) and SE US vulnerable (see link below from the Geology Journal http://geology.com/noaa/atlantic-ocean-tsunami/). I cc-copy Mike Case since the FAQs (http://www.nrc.gov/japan/faqs-related-to-japan.pdf) may be coming from Research and NRO, and may miss the atlantic ocean tsunamis.

George

-----Original Message-----
From: George Bacuta (b)(6)
Sent: Friday, March 18, 2011 8:22 PM
To: Bacuta, George C Jr MVN
Subject: Atlantic Ocean Tsunamis

Atlantic Ocean Tsunamis
Maps of Atlantic Tsunami Travel Times
Travel Time Maps Composed by NOAA using Tsunami Travel Time Software.

http://geology.com/noaa/atlantic-ocean-tsunami/

Atlantic Ocean Tsunamis: Rare but Possible

A tsunami in the Atlantic Ocean is a rare event. Part of the reason for this low incidence of tsunamis is the lack of subduction zones - the most common source of tsunami-causing earthquakes.

000/411

Although the incidence of Atlantic tsunamis is low the threat should be taken seriously because millions of people live in low-elevation locations around the rim of the Atlantic basin. The travel time maps below show that once a tsunami is generated the response time for mass evacuation can be uncomfortably short.

Subduction Zones

The only subduction zones in the Atlantic basin are along the eastern edge of the Caribbean Plate and the eastern edge of the Scotia Plate in the South Atlantic. These subduction zones are small, they are not exceptionally active and that accounts for the low incidence of earthquake-generated tsunamis.

The magnitude 7.3 earthquake that occurred off the northwest coast of Puerto Rico on October 11, 1918 was a subduction zone earthquake. It generated a tsunami with a run-up height of 6 meters that cause extensive damage and killed over 100 people. A travel time map for this tsunami can be seen below.

Lisbon, Portugal - 1755

The most widely known Atlantic Ocean tsunami struck Lisbon, Portugal on November 1, 1755 . It was caused by a magnitude 8.6 earthquake beneath the floor of the Atlantic about 100 miles offshore. This earthquake and associated tsunami destroyed most of the city of Lisbon. Waves up to 12 meters high hit the coastlines of Spain and Portugal just minutes after this earthquake. Over nine hours later waves with seven meter runup heights arrived in the Caribbean and caused significant damage. The earthquake and tsunami killed between 60,000 and 100,000 people. A travel-time map for this tsunami is shown below.

Submarine Landslides

Submarine landslides have caused tsunamis in the Atlantic Ocean. On November 18, 1929, an earthquake on the southern edge of the Grand Banks, south of Newfoundland, triggered a large submarine landslide that generated a tsunami.
That tsunami was recorded all along the eastern coast of the United States and in the Caribbean. At least 28 people were killed in Newfoundland. A travel time map for this tsunami is shown below.

Some researchers believe that a large landslide in the Canary Islands could generate a tsunami with basin-wide impact. Faults on the southwest side of La Palma Island associated with Cumbre Vieja Volcano could be the detachment surface of a mega-landslide (see image at right).

Tsunami Safety Criteria and Current Site Reviews in the United States

By

Goutam Bagchi, Hosung Ahn, Henry Jones, Annie Kammerer,
Richard Raione and Nilesh Chokshi

United States Nuclear Regulatory Commission

Abstract

The U.S. Nuclear Regulatory Commission (NRC) has promulgated an alternate licensing framework for early site permits (ESPs), certified reactor designs, and combined construction permits and operating licenses (COLs) as described in 10 Code of Federal Regulations (CFR) Part 52. New applicants have been using the Part 52 framework in submittals since 2003. The reactor site criteria are addressed in 10 CFR Part 100. Guidance for the public on approaches that meet NRC requirements is outlined in NRC regulatory guides. Factors to be considered when selecting the site include physical characteristics of the site including seismology, meteorology, geology, and hydrology. The NRC staff review guidance and acceptance criteria are provided in a document, "Review of Safety Analysis Reports for Nuclear Power Plants, NUREG 0800, Revised March 2007." Section 2.4 of the staff guidance in NUREG 0800 relates to hydrology and flooding design basis for a nuclear power plant.

The objective of this paper is to describe several initiatives undertaken in the U.S. to capture the lessons learned from the 2004 Indian Ocean tsunami; to describe revision of the staff guidance documented in NUREG 0800 Section 2.4.6, "Probable Maximum Tsunami Hazards" and some essential elements from Section 2.4.5, "Probable Maximum Surge and Seiche Flooding;" and to describe efforts related to the revision of the regulatory guide 1.59, "Design Basis Floods for Nuclear Power Plants." This document also describes the efforts to use the lessons and insights learned from the current site reviews.

Several coastal sites are currently under review for assessment of flood parameters associated with tsunami and hurricane (e.g. maximum and minimum surge levels, residence time, recession rate, erosion and sedimentation effects, etc.). Modeling of wave propagation and overland runup is important for these efforts. Also, tsunami and hurricane surge estimates, including consideration of site-specific long term climate change and sea level rise effects are important aspects of the assessment. At coastal sites, the effects of tsunami and hurricane should be carefully examined to determine which effect governs the site flooding hazard.

Introduction

The Code of Federal Regulation Title 10, Part 100 (10 CFR Part 100) relates to Reactor Site Criteria, and Subpart A applies to applications prior to 1997 and Subpart applies to applications after 1997. The site factors that are required to be considered include geological, seismological, hydrological, meteorological and other factors. In order to expedite site selection and certification of standard reactor designs a decoupled process was incorporated in 10 CFR Part 52 of the NRC regulation. This decoupled process allows for early site permit (ESP) applications to be separate from the standard reactor certification. The ESP needs to establish site characteristics that can accommodate an envelope of plant parameters. An applicant seeking to license a nuclear power plant can then use an ESP and a certified reactor design to submit an application for a combined operating license. Although the option exists for an applicant to use a new reactor design at a brand new site or use an ESP with a new reactor design.

NRC regulation 10 CFR Part 100.20 requires adherence to a set of siting factors. Assessment activities related to these factors include the following:

- The nature and proximity of man-related hazards (e.g., airports, dams, transportation routes, military and chemical facilities) must be evaluated to establish site parameters for use in determining whether a plant design can accommodate commonly occurring hazards, and whether the risk of other hazards is very low.
- Physical characteristics of the site, including seismology, meteorology, geology, and hydrology must be identified, characterized and assessed.
- Meteorological characteristics of the site that are necessary for safety analysis or that may have an impact upon plant design (such as maximum probable wind speed and precipitation) must be identified and characterized.
- Factors important to hydrological radionuclide transport (such as soil, sediment, and rock characteristics, adsorption and retention coefficients, ground water velocity, and distances to the nearest surface body of water) must be obtained from on-site measurements. The maximum probable flood along with the potential for seismically induced floods must be estimated using historical data.

In addition to the consideration of the siting factors above, a proposed facility must include the principal design criteria. The principal design criteria establish the necessary design, fabrication, construction, testing, and performance requirements for structures, systems, and components important to safety; that is, structures, systems, and components that provide reasonable assurance that the facility can be operated without undue risk to the health and safety of the public. Appendix A to 10 CFR Part 50 specifies these general design criteria (GDC) to establish minimum requirements for the principal design criteria for water-cooled nuclear power plants similar in design and location to plants for which construction permits have been issued by the Commission. The General Design Criteria are also considered to be generally applicable to other types of nuclear power units and are intended to provide guidance in establishing the principal design criteria for such other units. GDC 2 requires appropriate consideration of the most severe

of the natural phenomena that have been historically reported for the site and surrounding area, with sufficient margin for the limited accuracy, quantity, and period of time in which the historical data have been accumulated. Appropriate combinations of the effects of normal and accident conditions with the effects of the natural phenomena are also required.

Regulatory Guidance on Flood Hazard Determination

Regulatory Guide (RG) 1.59, "Design Basis Floods for Nuclear Power Plants" provides guidance for one acceptable method of establishing the design basis floods at a specific site and NUREG 0800, "Standard Review Plan (SRP)" provides guidance to the NRC staff on details of conducting the review and the determination of safety findings. RG 1.59 is currently being revised, and the SRP was revised on March 31, 2007.

NRC has adopted the concept of a "probable maximum event," for estimating design bases. The probable maximum event, which is determined by accounting for the physical limits of the natural phenomenon, is the event that is considered to be the most severe reasonably possible at the location of interest and is thought to exceed the severity of all historically observed events. For example, dam failures, a probable maximum flood (PMF) is the hypothetical flood generated in the drainage area by a probable maximum precipitation (PMP) event. The probable maximum storm surge is generated by the probable maximum hurricane (PMH) or the probable maximum windstorm (PMWS). These events are defined by the American National Standards Institute (ANSI) and ANS in ANSI/ANS-2.8-1992 (ANS, 1992). Similar concepts exist for a probable maximum tsunami, which is not covered in the ANSI standard. Because the PMP is a deterministic concept with no associated probability distribution, estimating the PMF also is a deterministic process.

In order to assess the design basis flood, first, for the selected site of a nuclear power plant, the causal phenomena or mechanisms that could lead to flooding should be identified. Flooding causal mechanisms refer to the set of those hydro-meteorological, geo-seismic, or structural failure phenomena (embankment, near by water control structures) that may produce a flood at or near the site. The geographical area that is relevant when determining floods at or near the site for each flooding causal mechanism should be identified. This geographical area, generally termed the vicinity of the site or site region (or just "the vicinity"), depends on the nature of the flood causal mechanism being considered. Floods generated in the vicinity because of the hydro-meteorological, geo-seismic, or structural failure may propagate to the site. For example, a PMF in a river that flows by a site may consist of the entire watershed of the river upstream of the site. For a site located near coastal regions, an ocean, or a large lake may also be subjected to tsunamis or storm surges that might propagate to the site.

An inspection of historical data may reveal the flooding causal mechanisms that should be considered for a site. For example, an inspection of air temperature data may suggest potential for formation of ice jams or dams, the subsequent collapse of which may generate a flood. More important is the need to inspect the hydrology, topography,

morphology, and geology and the presence of any water control structures in the vicinity of the site (e.g., a site located on the banks of a river should be investigated for the PMF in the river; a site that has several upstream dams should be analyzed for floods from single and cascading dam failures). Typically, flooding causal mechanisms that should be considered include local intense precipitation, flooding in rivers and streams, flooding from upstream dam breaches or failures, flooding from storm surges or seiches, flooding from tsunamis, flooding from ice-induced events, and flooding from channel diversions towards the site. A hierarchical hazard assessment starts with the most conservative simplifying assumptions that maximize the hazards from the probable maximum event for each natural flooding causal phenomenon expected to occur in the vicinity of a proposed site. If the site is not inundated by floods from any of the phenomena, a conclusion that the site is not susceptible to flooding would be valid (ANS, 1992), and no further flood hazard assessment is needed. For these reasons, the SRP emphasizes the need to apply a hierarchical approach for establishing the design basis flood.

U. S. Tsunami Initiatives Post-2004 Indian Ocean Tsunami

In response to the 2004 Indian Ocean tsunami, in 2005 the NRC coordinated a tsunami safety study with the National Tsunami Safety initiative conducted by the National Oceanic and Atmospheric Administration (NOAA). The NRC tsunami hazard study was conducted by the Pacific Northwest National Laboratory and the Pacific Marine and Environmental Laboratory which is a part of NOAA. This early effort resulted in the publication of two documents. They were NUREG-CR 6966, "Tsunami Hazard Assessment at Nuclear Power Plant Sites in the Untied States of America", which was published in final form in March 2009, and NOAA Technical Memorandum OAR PMEL-136, "Scientific and Technical Issues in Tsunami Hazard Assessment of Nuclear Power Plant Sites,", which was published in 2007. These documents form the basis of the 2007 tsunami-related updates to NUREG 0800.

In 2006, the NRC also initiated a long-term research tsunami research program. This program, which includes cooperative work with the United States Geological Survey (USGS) and the National Oceanic and Atmospheric Administration (NOAA), was designed both to support activities associated with the licensing of new nuclear power plants in the U.S and to support development of new regulatory guidance. This research program has resulted in several publication and made important contributions to tsunami modeling approach and standards, as summarized in conference papers by Kammerer (2008)

Necessarily, the US NRC research program includes assessment of both seismic- and landslide-based tsunamigenic sources in both the near and the far fields. The inclusion of tsunamigenic landslides, an important category of sources that impact tsunami hazard levels for the Atlantic and Gulf Coasts, is a key difference between this program and most other tsunami hazard assessment programs that existed at the time. The initial phase of work undertaken by the USGS as part of the research program consisted of collection, interpretation, and analysis of available offshore data, with significant effort focused on characterizing offshore near-field landslides and analyzing their tsunamigenic potential

and properties. This work is summarized in ten Brink et al (2008). In addition, eight papers have been published in a special edition of Marine Geology Marine Geology Special Issue: Tsunami Hazard Along the U.S. Atlantic Coast, Volume 264, Issues 1-2, (2009) dedicated in whole to the results of the NRC research program. These papers are listed in the reference section of this document.

In the current phase of research, additional field investigations are being conducted in key locations of interest and additional analysis of the data is being undertaken. Simultaneously, the MOST tsunami generation and propagation model used by NOAA has been enhanced to include landslide-based initiation mechanisms and is being used to investigate the impact of the tsunamigenic sources identified and characterized by the USGS. The potential for probabilistic tsunami hazard assessment will also be explored in the final phases of the program.

Regulatory Guide 1.59 (1977) briefly discussed tsunami as a source of flooding. This regulatory guide is currently being updated. However, the update of this guide will not include tsunami-induced flooding. NRC staff is currently preparing a new regulatory guide focused on tsunami hazard assessment and risk.

U. S. Storm Surge Initiatives Post-2005 Hurricane Katrina

At the end of August 2005, Hurricane Katrina made landfall near the Louisiana/ Mississippi border. Less than one month later, Hurricane Rita struck near the Louisiana/Texas border. Both of these storms produced catastrophic damage, and areas of the Louisiana and Mississippi coasts were devastated. NRC tasked the U.S. Army Corps of Engineers (USACE) to review the NOAA Technical Report NWS 23, "Meteorological Criteria for Standard Project Hurricane and Probable Maximum Hurricane Wind Fields, Gulf and East Coasts of the United States" and the NRC Regulatory Guide 1.59, "Design Basis Floods for Nuclear Power Plants". Regulatory Guide 1.59 and its supporting documents provide a methodology for estimating the probable maximum surge (PMS) for open coast locations of the Atlantic and Gulf of Mexico. The PMS estimates are determined by use of the probable maximum hurricane (PMH) parameters applied as input to a quasi-two-dimensional numerical storm surge model developed in the early 1970s. The PMH is a hypothetical hurricane having a combination of characteristics that give the highest sustained wind speed that can probably occur at a specified location.

In 2009, the Engineer Research and Development Center, Corps of Engineers Coastal and Hydraulics Laboratory (ERDC CHL) recommended that both the NWS Report 23 and Regulatory Guide 1.59 be updated. The meteorological criteria for the PMH wind fields are developed in the NOAA Technical Report NWS 23 published in September 1979. However, additional information from the many sources which were unavailable at the time of that study, along with data from many well-documented storms since 1979, have shown some potentially important inconsistencies between the PMH derived in that study and current understanding of the characteristics of intense hurricanes. Similarly, the two-dimensional storm surge model developed in 1971 is extremely limited by restrictions and simplifications made in order to make the problem computationally tractable given

the computer resources available in the early to mid 1970's. The model assumptions and simplifications reduce the applicability and accuracy of the model.

Based on new theoretical concepts and data, NRC has continued its strong collaboration with NOAA and USACE with the ultimate objective to transition storm surge regulatory guidance to a more risk-informed methodology (1) by accounting for annual probabilities of exceedance of joint wind speed/storm surge events, and (2) by considering the effects of topography and bathymetry at the sites of interest, as the storm surge at any specific location is highly dependent upon these factors. In general, the methodology involves the simulation and selection of a stochastic set of storm tracks (synthetic approach), integration of the selected storm tracks into a hydrodynamic simulation model to generate time histories of wind speeds and corresponding time histories of storm surge heights at a site, and the application of probabilistic methods to develop joint probabilities of exceedance and mean recurrence intervals for wind speed/storm surge height events.

Limited observed data and the scale and extent of coastal storm surges have defeated attempts to characterize them by a statistical analysis of direct measurements. Thus, it is necessary to perform simulation studies using knowledge of the local climatology combined with numerical models capable of accurately simulating storm surges throughout the coastal zone. The current state-of-the-art uses the Empirical Simulation Technique (EST) and Joint Probability Method (JPM). The EST method utilizes historic data to generate a large number of multi-year simulations of possible future storm events for a specific location. The approach is based on resampling and interpolation of data contained in a database of events derived from historic events. The ensemble of simulations is consistent with the statistics and correlations of past storm activity at the site, but allows for random deviations in behavior that are likely to occur in the future. The JPM method considers all possible combinations of storm characteristics at landfall, calculates the surge effects for each combination, and then combines these results considering the combinations' associated probabilities. The result is the annual probability of exceeding any desired storm stage. Both the EST and JPM methods have become the standard approach for the evaluation of surge inundation from tropical cyclones.

EST and JPM schemes have been developed and applied in recent probabilistic hurricane-studies performed by teams led by NOAA and by USACE for the central Gulf of Mexico coast. An empirical simulation technique for modeling the entire tracks of tropical cyclones was first published by Vickery, et al. (2000a) and used to determine hurricane wind speeds and storm surge for the Gulf of Mexico and Atlantic coasts for the NRC. The surge model used in the Vickery study was the NOAA standard storm surge model SLOSH (Sea, Lake and Overland Surges from Hurricanes). The USACE has an ongoing study for the Gulf of Mexico coast using the JPM method and ADCIRC (Advanced Circulation) storm surge model to refine the physics of the processes that contribute to storm surge (Resio and Westerink, 2008).

The Great Lakes and climate change remain challenges. Although the EST method is applicable to extratropical storms, more research will be required to update guidance for

future NRC nuclear power plant sites located on the Great Lakes. Current guidance for extratropical storm surge is defined by the American National Standards Institute (ANSI) and ANS in ANSI/ANS-2.8-1992 (ANS, 1992). Similar to tropical cyclones, PMS estimates are determined by use of the probable maximum storm (PMS) parameters applied as input to a quasi-two-dimensional numerical storm surge model developed in the early 1970s. Site-specific flooding analyses from PMS is carried out by using qualified and benchmarked wave run models based on detailed flow channel cross sections and contours. In regard to climate change, since the statistics, and thus the risks of certain surge heights, depend on the storms, any change in storm intensities will lead to a change in storm surge heights. While mean sea level is expected to rise, storms may become in some regions more frequent and violent, while in others less so. This remains an area of intense scientific scrutiny. When any significant change becomes evident, the NRC has regulatory measures available to implement changes, if necessary for adequate protection of public health and safety.

Current Reviews for Coastal Sites

There are several coastal sites that are currently in review. Section 2.4.6 of the Final Safety Analysis Report (FSAR) for COL applications includes the description of PMT, historical tsunami record, source generator characteristics, tsunami analysis, tsunami water levels, hydrography and harbor or breakwater influences on tsunami, and effects on safety-related facilities. FSAR are produced by each licensee and submitted to the US NRC.

The NRC staff bases the PMT for the costal sites on the historical record of tsunamis and previously published tsunami assessments for the Gulf of Mexico or the Atlantic Ocean. Wave heights from offshore landslide sources were considered in the establishment of the PMT.

The NRC staff then establishes a maximum water level at the site of interest, by applying a runup amplification factor and taking into account 10% exceedance spring high tide and global sea-level rise within the next century. The staff determines whether the estimated PMT will not affect safety-related facilities at the proposed site or not based on the maximum on-site surge level. If affected, the staff proposes flood protection measures in FSAR Section 2.4.10. If the tsunami forces or erosion is of concern, the staff recommends sea walls or wave break structures. If the site flooding is of concern, then external flood protections\measures are necessary for plant safety.

Historical and/or Paleo Tsunami

The staff examines published information to determine the source characteristics for several different types of potential tsunamis sources: seismogenic, volcanogenic, and landslide generated. Both far-field seismogenic sources and near-field submarine and above ground landslide sources as potential generators for the PMT are considered. After reviewing published and internet-based tsunami catalogs, databases, and historical accounts, the staff identifies historical tsunami events for the site of interest.

The application should address any evidence of paleo-tsunami deposits in the FSAR. For example for South Texas site in the USA, a deposit located in Falls County, Texas near the Brazos River was originally interpreted as caused by a paleo-tsunami. The common interpretation of this deposit is that it was emplaced by a tsunami generated from Chicxulub asteroid impact, owing to its date and the existence of impact ejecta at the Brazos site. Researchers suggested that a tsunami wave 50-100 m high was necessary to explain this deposit. It appears that the wave that created these deposits was not likely to be generated by any landslide source that would be of relevance to the present-day PMT determination. Waves emanating from such a source would not have the needed extreme wave heights and long periods to be able to propagate significant wave energy far inland to a potential NPP site. The common interpretation of this deposit is that it was emplaced by a tsunami generated by the Chicxulub impact. It is unlikely, however, that the wave heights inferred from the deposit are relevant to determination of the present-day PMT at a proposed site.

Potential Tsunamigenic Sources

Potential tsunami sources that are likely to determine the PMT at the U.S. costal sites are submarine landslides, subaerial landslides, volcanogenic sources, near-field intra-plate earthquakes and inter-plate earthquakes. These sources are identified as following:. .

Subaerial Landslides: With regard to subaerial landslides, the staff looks for major coastal cliffs near the site that would produce tsunami-like waves that exceed the amplitude of those generated by other sources.

Volcanogenic Sources: The staff relies on the databases developed by either USGS, NOAA, or other government agencies (e.g. the Global Volcanism Program of the Smithsonian Institution, from*http://www.volcano.si.edu/*). Catastrophic failures associated with volcanoes along the U.S. Coasts are considered as potential tsunami sources that generate significant wave activity near the sites of interests.

Intra-Plate Earthquakes: The staff relies on the tectonic plate boundary maps in the Gulf of Mexico and Atlantic regions. Also looking are the maximum magnitude and slip of earthquakes. The staff reviews the maximum slip, and consequently the maximum sea floor displacement, associated with an earthquake scales with its magnitude to determine the initial tsunami wave amplitude associated with an intra-plate earthquake..

Inter-Plate Earthquakes: In the far-field, description of major plate boundary faults, specific source parameters, and offshore tsunami amplitudes from oceanic inter-plate earthquakes are estimated.

Local Submarine Landslides: Submarine landslides in the U.S. Coasts are considered a potential tsunami hazard for the reactor sites for two reasons: (1) some dated landslides in the region have post-glacial ages, suggesting that triggering conditions for these landslides are still present and (2) analysis of

recent seismicity suggest the presence of small-scale energetic landslides in the region.

The primary landslide parameters that are used in the tsunami wave generation models include the excavation depth, volume and slide width, which can be directly measured from sea floor mapping of the largest observed slide in the four geologic provinces. The other necessary parameter is down slope landslide length, interpreted from the runout distance. The runout distance measured from sea floor mapping is a combination of fast plug flow (low viscosity, non-turbulent), creeping plug flow (high viscosity/viscoplastic, non-turbulent) and turbidity currents (turbulent boundary layer fluid). The latter two likely have little to no tsunami-generating potential. The amplitude of the initial negative wave above the excavation region is linked to the maximum excavation depth. The amplitude of the initial positive wave above the deposition region is determined from a conservation of landslide volume. The excavation volume can be well determined using GIS techniques (see below). Setting the deposition volume equal to the excavation volume, the positive amplitude is determined for a given landslide length. For a fixed volume, increasing the landslide length decreases the initial positive amplitude of the tsunami.

Landslide volume calculations are based on measuring the volume of material excavated from the landslide source area using a technique similar to that of ten Brink and others (2006) and Chaytor and others (2009). Briefly stated, the approach involves using multibeam bathymetry to outline the extent of the excavation area, interpolating a smooth surface through the polygons that define the edges of the slide to provide an estimate of the pre-slide slope surface, and subtracting this surface from the present seafloor surface.

The maximum observed landslide from multibeam surveys is taken as the maximum landslide for a given region. It may be possible that larger landslides could occur in a given region; however this determination of the maximum landslide is consistent with the overall definition of PMT as "the most severe of the natural phenomena that have been historically reported or determined from geological and physical data for the site and surrounding area". In this case, the maximum landslide is taken from geologic observations spanning tens of thousands of years.

Seismic Seiches

Rather than being impulsively generated by displacement of the sea floor, seismic seiches occur from resonance of seismic surface waves within enclosed or semi-enclosed bodies of water. The harmonic periods of the oscillation are dependent on the dimensions and geometry of the body of water. For instance in 1964, seiches were set up along the Gulf Coast from seismic surface waves emanating from the M=9.2 Gulf of Alaska earthquake, owing in part to amplification of seismic waves from the thick sedimentary section along the Gulf Coast. Because the propagation path from Alaska to the Gulf Coast is almost completely continental and because the magnitude of the 1964 earthquake is close to the

maximum possible for that subduction zone, it is likely that the historical observations of 1964 seiche wave heights are the maximum possible and less than the PMT amplitudes from landslide sources.

Tsunami Propagation Modeling

Tsunami propagation, runup, and inundation have been computed using COULWAVE model which is a 2-dimentional non-linear wave model. At the beginning of the wave simulation, the staff used to make an initial simulation using a one-dimension wave model. The purpose of these initial simulations is to provide an upper limit of the tsunami wave height that could be generated by different landslide scenarios.

Source parameters for the simulation include landslide width, length, and excavation depth. Although landslide volume is not a direct parameter used in the model, the volumes of excavation and deposition are conserved and are used in determining the amplitude of the initial positive wave. Note that these limiting simulations use physical assumptions that are arguably unreasonable; the results of these simulations are useful to filter out tsunami sources under even the most conservative assumptions. Specifically, these assumptions are:

1. Time scale of submarine landslide motion is very small (i.e., instantaneous) compared the period of the generated tsunami
2. Bottom roughness, and the associated energy dissipation, is negligible in locations that are initially wet (i.e. locations with negative bottom elevation, offshore)

With Assumption 1, the free water surface response matches the change in the seafloor profile exactly. The landslide time evolution parameter, which is associated with a high degree of uncertainty, is thus removed. Assumption 2 prevents the use of an overly high bottom roughness coefficient, which could artificially reduce the tsunami energy reaching the shoreline. Such an assumption is too physically unrealistic to accept for the inland regions where the roughness height may be the same order as the flow depth. For tsunami inundation, particularly for inland regions such as those currently under review, the wave would need to inundate long reaches of densely vegetated land to reach the site; therefore inclusion of a conservative measure of bottom roughness is necessary in these cases.

Tsunami and Hurricane surge induced wave run-up modeling is important, since these can cause site flooding that can lead to erosion induced failure of levee/embankment etc that may be used as safety significant water control structures at the site.

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OVERVIEW OF THE U.S. NUCLEAR REGULATORY COMMISSION COLLABORATIVE RESEARCH PROGRAM TO ASSESS TSUNAMI HAZARD FOR NUCLEAR POWER PLANTS ON THE ATLANTIC AND GULF COASTS

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ABSTRACT :

In response to the 2004 Indian Ocean Tsunami, the United States Nuclear Regulatory Commission (US NRC) initiated a long-term research program to improve understanding of tsunami hazard levels for nuclear facilities in the United States. For this effort, the US NRC organized a collaborative research program with the United States Geological Survey (USGS) and the National Oceanic and Atmospheric Administration (NOAA) with a goal of assessing tsunami hazard on the Atlantic and Gulf Coasts of the United States. Necessarily, the US NRC research program includes both seismic- and landslide-based tsunamigenic sources in both the near and the far fields. The inclusion of tsunamigenic landslides, an important category of sources that impact tsunami hazard levels for the Atlantic and Gulf Coasts is a key difference between this program and most other tsunami hazard assessment programs. The initial phase of this work consisted of collection, interpretation, and analysis of available offshore data, with significant effort focused on characterizing offshore near-field landslides and analyzing their tsunamigenic potential and properties. In the next phase of research, additional field investigations will be conducted in key locations of interest and additional analysis will be undertaken. Simultaneously, the MOST tsunami generation and propagation model used by NOAA will first be enhanced to include landslide-based initiation mechanisms and then will be used to investigate the impact of the tsunamigenic sources identified and characterized by the USGS. The potential for probabilistic tsunami hazard assessment will also be explore in the final phases of the program.

KEYWORDS:
Tsunami, Landslide, Seismic, Hazard, Nuclear

1. BACKGROUND

In response to the 2004 Indian Ocean Tsunami, as well as the anticipation of the submission of license applications for new nuclear facilities, the United States Nuclear Regulatory Commission (US NRC) initiated a long-term research program to improve understanding of tsunami hazard levels for nuclear power plants and other coastal facilities in the United States. To undertake this effort, the US NRC organized a collaborative research program with researchers at the United States Geological Survey (USGS) and the National Oceanic and Atmospheric Administration (NOAA) for the purpose of assessing tsunami hazard on the Atlantic and Gulf Coasts of the United States. The project work described in this paper represents the combined effort of a diverse group of marine geologists, geophysicists, geotechnical engineers, and hydrodynamic modelers to evaluate tsunami sources that have the potential to impact the U.S. Atlantic and Gulf coasts.

The Atlantic and Gulf Coasts are the focus of this program, both because of the number of existing and proposed nuclear facilities located on these coasts and because many promising research efforts for assessing tsunami

hazard in the Pacific Coast of the United States are already underway as a result of programs outside the US NRC. Tsunami has been long known as a hazard in the Pacific Ocean. However, the 2004 tsunami highlighted the fact the tsunamis can occur in other oceans that are less prepared for this rare phenomenon. Although tsunami are far rarer along the Atlantic and Gulf of Mexico coastlines, some areas can be highly vulnerable to tsunamis when they do occur because major population centers and industrial faculties are located near the shoreline at low-lying elevations, and often in estuaries. This is in comparison to the Pacific coast where tsunamis are more frequent but the coastline is more sparsely populated and most sections have more topographic relief.

Because the US NRC is interested in understanding hazard associated with the rare large tsunami that may occur over long time periods (in excess of 10,000 years), the research program was developed to investigate both seismic and landslide tsunamigenic sources. It also includes the study and characterization of large sources in the far field, as well as sources in the near field such that all key sources were considered. The study of near-field and far-field tsunamigenic landslides is a key difference between this research program and other tsunami hazard assessment programs, which are typically focused on seismic sources. Although seismic sources are important on the Atlantic and Gulf Coasts, submarine landslides have also historically generated destructive tsunamis and so must be fully investigated in this program. In landslide initiated tsunami, the extent of damaging waves generated by landslides is generally smaller and more localized. However, along coastlines proximal to catastrophic submarine landslides, tsunami run-up can be significant as exemplified by the 1929 Grand Banks tsunami (Newfoundland and Nova Scotia), which likely had a significant landslide-generated component. Less is generally known about submarine landslides as tsunami triggers in comparison to their earthquake counterparts.

Although only a few years old, this research program has already produced significant results that are currently or will soon be available to the public through a variety of technical publications. These publications include a USGS report to the US NRC (Ten Brink et al, 2007) and multiple articles in a special issue of Marine Geology to be published late 2008 or early 2009 (Barkana et al; Chaytor et al; Geist et al; Lee; Locat et al; Ten Brink et al, 2008). The early research and results discussed in the USGS report were focused on providing sufficient information on the source parameters useful for qualitative assessment of tsunami hazard for the Atlantic and Gulf coasts. This information is currently being used to develop and review tsunami hazard assessments for new nuclear power facilities in the United States. A companion paper in this conference summarizes and discusses in more detail some of the early results of the US NRC program (Kammerer et al, 2008)

2. INITIAL INVESTIGATION OF NEAR-FIELD LANDSLIDE SOURCES IN THE ATLANTIC

In the initial phase of work a significant level of effort was focused on identifying and characterizing offshore near-field landslides and on understanding their regional distribution along the coasts. In this work, efforts were made to consider the impact of varying conditions, such as the effects of glacial periods and sea level changes. Once early results on the location and characterization of offshore landslides was obtained, an effort towards modeling one of the larger slides, the Currituck Slide, was initiated to better understand the tsunami hazard posed by the mapped slides. Before tsunami generation and propagation modeling of the Currituck slide could be undertaken, important properties of the slide, such as flow velocity, needed to be characterized. Work at Laval University included analysis of the dynamic elements of the Carrituck slide; and modeling of the slide was undertaken by both Texas A&M University and the USGS. A summary of each of these steps is provided below and a more complete discussion of the results of key research elements is provided in the companion paper in this conference. This early work has also been well documented in the public USGS report (Ten Brink et al, 2007).

2.1 DATA COLLECTION

The first step in the initial investigation of lanslides in the Atlantic was the collection and analysis of a large amount of available information useful for the identification and characterization of offshore landslides along the Atlantic coast of the U.S. Multibeam bathymetry, Geologic Long-Range Inclined Asdic (GLORIA) sidescan sonar imagery, a regional grid of high-resolution seismic profiles, and published accounts of sediment cores from

the region was collected (Figure 1). In addition to these data sets, a review of past work studying the geology of the offshore environment, as well as studies of offshore landslides were also collected, reviewed, and summarized. A discussion of the body of previous work is provided in the USGS report (Ten Brink et al, 2007).

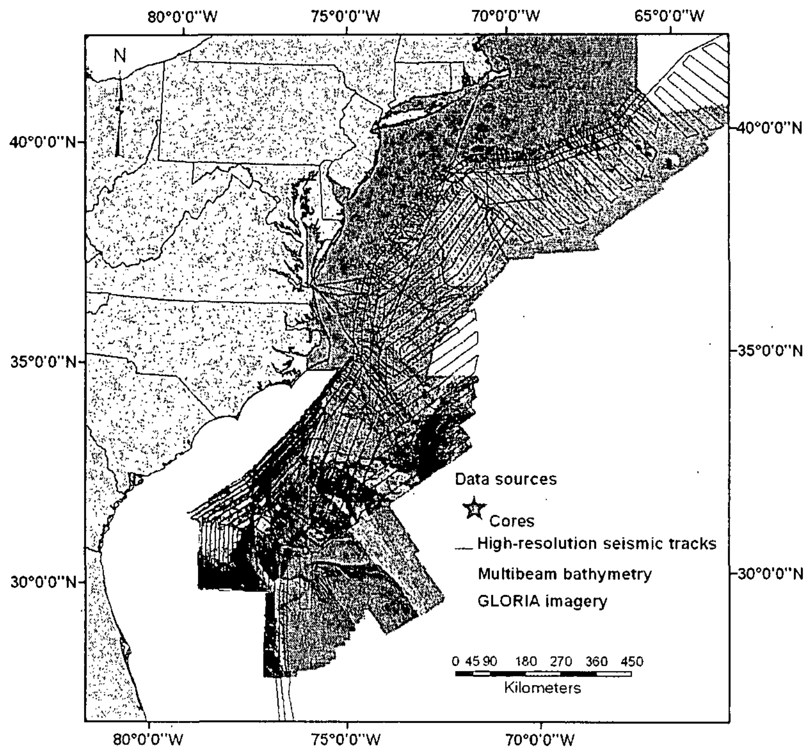

Figure 1 Data Collected for Study of Potential Tsunamigenic Landslides on U.S. Atlantic Coast

Data used in the compilation of the Atlantic coast bathymetry map used in the study were acquired from several sources and vary in age, sounding density, and positional accuracy. The primary data set was acquired by the University of New Hampshire (UNH) (Gardner et al., 2006; Cartwright and Gardner, 2005) and provides near continuous coverage of the U.S. Atlantic margin from the base of the continental slope down to the abyssal plain. These data include gridded bathymetric soundings and mosaiced acoustic backscatter. For sections of the continental slope and rise not covered by the UNH data set, several additional multibeam datasets were used. For areas in which no multibeam soundings were available, sounding data from the National Ocean Service hydrographic database and the NOAA coastal relief model provided bathymetric coverage of the continental slope. Efforts will be made to address some of these data gaps through field studies in future phases of the program. The final map developed for this project covers the ocean floor from the shoreline to depths greater than 5,000 m, between 43.5 and 24 degrees north latitude.

In addition to the acoustic backscatter data from the UNH multibeam surveys, GLORIA sidescan sonar data were used to identify and map landslide features along the U.S. Atlantic continental margin (EEZ-SCAN 87, 1991). Analogue records of 3.5-kHz seismic reflection profiles, co-acquired with the GLORIA sidescan imagery, were used to determine location, geometry, and thickness of landslide features. Although other data sets are available, the acquisition parameters and quality of these data are consistent over the entire area of study, and they provide a relatively clear picture of the upper sedimentary section.

Over 1400 cores have also been collected from the study area off the Atlantic coast, and descriptions of the cores are available. Approximately 1,000 have been visually described, and 145 of them have had general ages

assigned based on faunal content. While the descriptions provided are often brief, they provide a valuable summary of the overall lithology of many of the cores.

2.2 IDENTIFICATION AND CHARACTERIZATION OF LANDSLIDES

The volume and quality of data collected greatly assisted in mapping the distribution and style of surficial submarine landslides along the eastern U.S. margin between the eastern end of Georges Bank and the northern end of the Blake Spur. The near-complete coverage of the Atlantic continental slope and rise by multibeam bathymetry provided a key high-quality and uniform data set that allowed for a more detailed and consistent view and assessment of the geomorphology of submarine landslides than had been possible in the past.

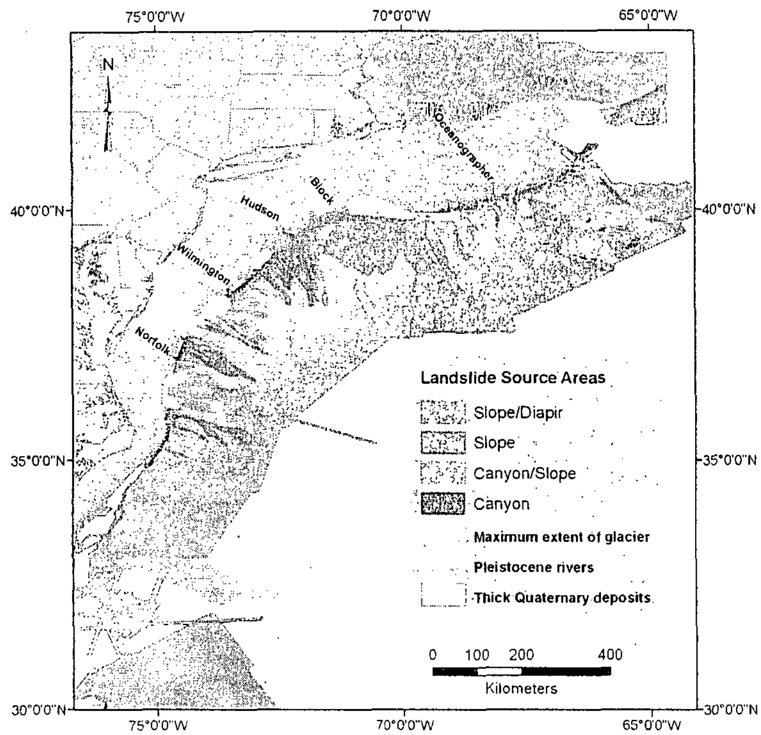

Figure 2 Initial Map of Landslide Source Areas Along the U.S. Atlantic Coast

The mapping of these landslide-affected areas was broken into several steps. The first step was to identify any scarps of significant size around and within landslide source areas. Scarps were easily identified in shaded-relief and slope maps derived from the bathymetric data. Next the areas affected by landslides were outlined. Depending on availability, a mix of shaded-relief imagery, backscatter imagery from the multibeam system, and GLORIA imagery were used. The final step was to merge the thickness information derived from subbottom profiles with the interpretation of the sea-floor imagery to distinguish the erosional and depositional sections of the landslide. The volumes of the source areas of mapped and potential slides of various sizes and differing geologic settings (e.g. submarine canyons or the open slope) were calculated.

This mapping indicates that landslides along the U.S. Atlantic margin initiate predominantly in two morphologic settings, canyon (heads and sidewalls) and on the open continental slope (Figure 2). The canyon-sourced failures often have several canyons feeding a single deposit, and the deposits are smaller than those derived from the open slope. As a result, they are unlikely to cause tsunami events. Open-slope failures commonly originate on the middle and lower slope in 800-2,200 m depths. These landslides extend farther offshore, are thicker, and have

considerably larger volumes than their canyon derived counterparts. As a result of the large volumes of material that sometimes fail, open slope-sourced slides are considered to have the most potential to initiate tsunami (Murty, 2003). However, a significant volume of material may also be mobilized in landslides associated with areas of salt diapirism as well. From the modeling of source volumes of individual scarps along the margin, we see that three regions (off Georges Bank, Currituck area, and in the Carolina Trough) have had a history of, and potential for, large volume failures. With the current data, it is difficult to determine if landslides on the southern New England slope involve large volumes of material per event, or if the region is dominated by smaller, but more numerous landslides.

2.3 CARRITUCK LANDSLIDE ASSESSMENT AND MODELING

In order to gain an initial understanding of the implications of the mapped landslides on the tsunami hazard along the Atlantic coast, a study to characterize and perform hydrodynamic modeling of the Carrituck landslide was undertaken. This work also showed the potential for the methods employed. Tsunami magnitude depends strongly upon the size of the slide and how the landslide moves as it fails and flows. Therefore, the first step was to determine the parameters needed for the tsunami generation and propagation modeling. This work had significant challenges because the initial geometry of the material was not known, it was unclear if there had been a single event or multiple events, and the properties of the geologic material were not well characterized. During this work several issues were considered and the researchers endeavored to answer the following multiple lines of inquiry. Ultimately a possible initial velocity and acceleration of the failed mass was developed from the mobility analyses.

Once estimates of the important landslide parameters had been developed, preliminary hydrodynamic modeling of the slide was conducted for the purpose of determining the range of possible near-shore wave heights and understanding the possible impact of the continental shelf. Considerations of bottom friction and non-linearity were included in this work. This study was undertaken early in the program and played an important role for the US NRC because the modeling allowed staff to understand the general implications of the initial landslide mapping results. It also helped to scope and focus the organization of the broader research program.

3. INVESTIGATION OF FAR FIELD TSUNAMIGENIC LANDSLIDES IN THE ATLANTIC

The research related to far field tsunamigenic landslides, has focused on collecting information and assessing the potential impact to the U.S. Atlantic and Gulf coasts. Numerous debris deposits from landslides have been identified in the literature along the Canadian, European and African coasts of the Atlantic Ocean and a number of possible source areas were considered in detail for this program. These areas include the Canary Islands, the Mid-Atlantic Ridge, the glaciated margins of northern Europe and Canada, the Scotia margin immediately NE of the U.S. border, the northern European margin, and the Puerto Rico trench. In many cases, evidence of tsunamis from landslides were found, although the effects were often highly localized as is common for landslide-initiated tsunami. The USGS report provides information on both historical tsunamis and proposed modeling parameters for these areas.

Perhaps the most publicized hypothesized hazard is that of a possible collapse of Cumbre Vieja, a volcano on the Canary island of La Palma (Ward and Day, 2001). As envisioned by Ward and Day, a flank collapse of the volcano may drop a rock volume of up to 500 km^3 into the surrounding ocean. The ensuing submarine slide is further hypothesized to generate a strong tsunami with amplitudes of 25 m in Florida. In the time since the initial work was published, significant work by other researchers has been undertaken to look at their assumptions. A review of all associated work was undertaken for this program and it was concluded that the danger to the U.S. Atlantic coast from the possible collapse of Cumbre Vieja is exaggerated. Mader (2001) pointed out that Ward and Day's assumption of linear propagation of shallow water waves is incorrect, because it only describes the geometrical spreading of the wave and neglects dispersion effects. A more rigorous hydrodynamic modeling by Gisler et al. (2006), confirms Mader's criticism. Their predicted wave amplitude for Florida is between 1 and 77

cm. A fuller discussion is provided in the USGS report and the potential impact of a collapse of Cumbra Vieja will be further studies by NOAA as part of this project.

4. INITIAL INVESTIGATION OF TSUNAMIGENIC LANDSLIDES IN THE GULF OF MEXICO

This project has also started investigating the potential for tsunamigenic landslides in the Gulf of Mexico. The Gulf of Mexico is a small, geologically diverse ocean basin that includes three distinct geologic provinces: a carbonate province, a salt province, and canyon to deep-sea fan province. Currently the work in this area is not as advanced as the assessment in the Atlantic. However, early work investigating landslides undertaken by this project and others that indicates that submarine landslides have occurred in each of the three provinces, although they vary in style and size among these different provinces. Landslides also have been shown to be active throughout much of the history of this basin, including in the Quaternary Period, up to the present. Submarine landslides have been studied in the Gulf of Mexico in the past for two reasons: first they can pose a hazard to offshore platforms and pipelines and second, when more deeply buried they can serve either as hydrocarbon reservoirs or barriers in reservoirs depending on their composition. The threat of submarine landslides as a generator of tsunamis has not previously been addressed for the Gulf of Mexico region. However, the existing literature describing the distribution and style of submarine landslides that have occurred in the Gulf of Mexico during the Quaternary has been reviewed for this program and is summarized in the USGS report. The review focused on landslides that have occurred in on the continental slope and rise in the Gulf of Mexico; with much of the discussion focused on the part of the basin within the U.S. Exclusive Economic Zone (EEZ) due to the availability of a greater number of publications from this region. Research is on-going in this area.

5. IDENTIFICATION AND CHARACTERIZATION OF SEISMIC SOURCES THAT MAY IMPACT THE ATLANTIC OR GULF COASTS

5.1 Sources in the Atlantic Ocean

Earthquake-generated tsunamis generally originate by the sudden vertical movement of a large area of the seafloor during a large magnitude earthquake. Such movement is generated by reverse or thrust faulting, most often in subduction zones. The Atlantic Ocean basin is generally devoid of subduction zones or potential sources of large reverse faults. The two exceptions are the Hispaniola-Puerto Rico-Lesser Antilles subduction zone, where the Atlantic tectonic plate subducts under the Caribbean plate, and the enigmatic zone of large earthquakes west of Gibraltar. These two earthquake source areas were investigated, an evaluation of their tsunamigenic potential was undertaken, and the potential for impact to the U.S. coastline by resulting tsunami was considered.

Four large tsunamigenic earthquakes have occurred in the Atlantic Ocean west of Gibraltar in the last 300 years. However, there is no simple tectonic model for this area that explains the generation of these earthquakes. As a result, promising work undertaken to determine the source parameters of the 1755 Lisbon earthquake is of particular interest. A variety of past studies have hypothesized various sources for this earthquake, which is known to have caused a tsunami around much of the Atlantic Ocean. However, prior to this project there had not been an attempt to fit cross-ocean tsunami reports of the 1755 Lisbon earthquake to any of the proposed fault sources. As part of this program, modeling of various sources is being undertaken to try to determine a viable source location and geometry that predicts the many records of tsunami impacts from the earthquake.

5.2 Sources in the Caribbean

The 2004 magnitude 9.2 Sumatra-Andaman earthquake was a surprise from a geologic and tectonic perspective in that it occurred along a highly oblique subduction zone, where the convergence rate is low, and where very large earthquakes were thought unlikely to occur. Many of the tsunamigenic fault zones in the Caribbean and

Atlantic are characterized by similar tectonics and may have higher hazard than has been previously predicted. In particular, a major concern was raised about the Puerto Rico trench, because a tsunami initiating here has a potential impact on the U.S. East Coast. The USGS has recently carried out extensive fieldwork in the Puerto Rico trench to understand the tectonics of the area. As a result, researchers on the US NRC project were able to rapidly provide an evaluation for this source. As part of this analysis, tsunami propagation from several different large-magnitude earthquakes in the Caribbean was modeled to estimate deep ocean tsunami amplitudes offshore U.S. Atlantic and Gulf coasts. A range of tsunami amplitudes is determined based on natural variations in slip distribution patterns expected for large magnitude earthquakes along plate boundaries in the Caribbean. This work is ongoing and has been useful for providing general hazard information to the US NRC.

A series of large earthquakes with mostly thrust motion took place in the eastern half of northern Hispaniola between 1946 and 1953. One of the events in 1946 was accompanied by a destructive local tsunami. In contrast to the Puerto Rico trench, a larger vertical motion is expected for a given magnitude of slip on portions of the Hispaniola trench. It is unclear, whether the western part of the subduction zone would rupture in a single earthquake and how far west the rupture would extend. Modeling is needed to determine if the U.S. Atlantic coast would be protected from tsunamis generated in this subduction zone by the Bahamas banks which are near sea level and act as obstructions to tsunami wave propagation.

5.2 Sources in the Gulf of Mexico

The Gulf of Mexico basin is devoid of subduction zones or potential sources of large reverse faults. However, the Caribbean basin contains two convergence zones whose rupture may affect the Gulf of Mexico, the North Panama Deformation Belt and the Northern South America Convergent Zone. Hydrodynamic modeling is needed to evaluate the role of the Yucatan straits (between Cuba and the Yucatan Peninsula) in modifying the propagation of tsunamis into the Gulf of Mexico, though some initial modeling hs been initiated.

6. UPCOMING ACTIVITIES

As part of the second phase of the program, which is currently underway, the USGS will conduct field investigations in key locations for the purpose of obtaining new data useful for determining tsunami hazard assessment of nuclear facilities. The USGS is also continuing investigations into assessing landslide potential in the Gulf of Mexico, determining the source of the 1755 Lisbon earthquake, and a variety of other topic of interest.

Simultaneously, the MOST tsunami generation and propagation model used by NOAA is currently being enhanced to include landslide-based initiation mechanisms and is being validated with case studies, including the 1958 Lituya Bay megatsunami. The enhanced MOST model will be used to investigate the tsunamigenic sources identified and characterized by the USGS, with the goal of creating an estimation of deterministic tsunami hazard levels for the full length of Atlantic and Gulf Coasts. This information may ultimately be developed into a map of deterministic tsunami hazard for these coastlines and will be of direct benefit to the US NRC efforts to assess tsunami hazard at coastal facilities.

The potential for developing tools and data to undertake probabilistic tsunami hazard assessments (PTHA) will also be a key focus of later phases of the research program. PTHA will require an understanding of the frequency of different initiating events. Some areas in which the US NRC is likely to initiate additional work in the coming years relates to understanding the timing of the submarine landslides identified in the Atlantic. One example is careful age dating on cores recovered from within and adjacent to mapped landslides. In the companion paper in this conference, information on the result of ongoing work, some of which is leading to PTHA is provided.

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PRELIMINARY RESULTS OF THE U.S. NUCLEAR REGULATORY COMMISSION COLLABORATIVE RESEARCH PROGRAM TO ASSESS TSUNAMI HAZARD FOR NUCLEAR POWER PLANTS ON THE ATLANTIC AND GULF COASTS

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ABSTRACT :
In response to the 2004 Indian Ocean Tsunami, the United States Nuclear Regulatory Commission (US NRC) initiated a long-term research program to improve understanding of tsunami hazard levels for nuclear facilities in the United States. For this effort, the US NRC organized a collaborative research program with the United States Geological Survey (USGS) and other key researchers for the purpose of assessing tsunami hazard on the Atlantic and Gulf Coasts of the United States. The initial phase of this work consisted principally of collection, interpretation, and analysis of available offshore data and information. Necessarily, the US NRC research program includes both seismic- and landslide-based tsunamigenic sources in both the near and the far fields. The inclusion of tsunamigenic landslides, an important category of sources that impact tsunami hazard levels for the Atlantic and Gulf Coasts over the long time periods of interest to the US NRC is a key difference between this program and most other tsunami hazard assessment programs. Although only a few years old, this program is already producing results that both support current US NRC activities and look toward the long-term goal of probabilistic tsunami hazard assessment. This paper provides a summary of results from several areas of current research. An overview of the broader US NRC research program is provided in a companion paper in this conference.

KEYWORDS:
Tsunami, Landslide, Seismic, Hazard, Nuclear

1. BACKGROUND

In response to the 2004 Indian Ocean Tsunami, as well as the anticipation of the submission of license applications for new nuclear facilities, the United States Nuclear Regulatory Commission (US NRC) initiated a long-term research program to improve understanding of tsunami hazard levels for nuclear power plants and other coastal facilities in the United States. To undertake this effort, the US NRC organized a collaborative research program with researchers at the United States Geological Survey (USGS), the National Oceanic and Atmospheric Administration (NOAA), and other key researchers for the purpose of assessing tsunami hazard on

the Atlantic and Gulf Coasts of the United States. The research described in this paper represents the combined effort of a diverse group of marine geologists, geophysicists, geotechnical engineers, and hydrodynamic modelers to evaluate tsunami sources that have the potential to impact the U.S. Atlantic and Gulf coasts.

The Atlantic and Gulf Coasts are the focus of this program, both because of the number of existing and proposed nuclear facilities located on these coasts and because many promising research efforts for assessing tsunami hazard in the Pacific Coast of the United States are already underway as a result of programs outside the US NRC. Tsunami has been long known as a hazard in the Pacific Ocean. However, the 2004 tsunami highlighted the fact the tsunamis can occur in other oceans that are less prepared for this rare phenomenon. Although tsunami are far rarer along the Atlantic and Gulf of Mexico coastlines, some areas can be highly vulnerable to tsunamis when they do occur because major population centers and industrial faculties are located near the shoreline at low-lying elevations, and often in estuaries. This is in comparison to the Pacific coast where tsunamis are more frequent but the coastline is more sparsely populated and most sections have more topographic relief.

Because the US NRC is interested in understanding hazard associated with the rare large tsunami that may occur over long time periods (in excess of 10,000 years), the research program was developed to investigate both seismic and landslide tsunamigenic sources. It also includes the study and characterization of large sources in the far field, as well as sources in the near field such that all key sources were considered. The study of near-field and far-field tsunamigenic landslides is a key difference between this research program and other tsunami hazard assessment programs, which are typically focused on seismic sources. Submarine landslides have also historically generated destructive tsunamis and so must be fully investigated in this program. In landslide initiated tsunami, the extent of damaging waves generated by landslides is generally smaller and more localized. However, along coastlines proximal to catastrophic submarine landslides, tsunami run-up can be significant as exemplified by the 1929 Grand Banks tsunami (Newfoundland and Nova Scotia), which likely had a significant landslide-generated component. Less is generally known about submarine landslides as tsunami triggers in comparison to their earthquake counterparts.

The development of tools and data to undertake probabilistic tsunami hazard assessments (PTHA) is a key long-term goal and the focus of later phases of the US NRC research program. Effectively developing PTHA tools will require an understanding of the frequency of different initiating events. Some areas in which the US NRC is likely to initiate additional work in the coming years relates to understanding the timing of the submarine landslides identified in the Atlantic. Some of the research discussed here represents the start of this long term element of the program.

Although less than two years old, this research program has already produced significant results that are currently or will soon be available to the public through a variety of technical publications. These publications include a USGS report to the US NRC (Ten Brink et al, 2007) and multiple articles in a special issue of Marine Geology to be published late 2008 or early 2009 (Barkana et al; Chaytor et al; Geist et al; Lee; Locat et al; Ten Brink et al, 2008). The early research and results discussed in the USGS report were focused on providing sufficient information on the source parameters useful for qualitative assessment of tsunami hazard for the Atlantic and Gulf coasts. The USGS report will be revised in 2008 and will include details related to the work summarized here. This information is currently being used to develop and review tsunami hazard assessments for new nuclear power facilities in the United States. A companion paper in this conference summarizes and discusses the complete US NRC program in more detail and provides a discussion of the seismic and landslide-based tsunami source characterizations (Kammerer et al, 2008).

2. SIZE DISTRIBUTION OF SUBMARINE LANDSLIDES ALONG THE U.S. ATLANTIC MARGIN AND ITS IMPLICATION TO TSUNAMI HAZARDS

The ability to determine the number, size, and frequency of large submarine landslides is a critical component in determining the hazard posed to coastal regions by destructive landslide-generated tsunamis. The efforts to characterize submarine landslides off the Atlantic coast represents the earliest effort of the US NRC tsunami

research program. This work is investigating the size distribution of submarine landslides along the U.S. Atlantic continental slope and rise using the size of the landslide excavation regions. The data collected for this effort, a description of methods used, and other information is discussed in more detail in the companion paper submitted to this conference (Kammerer et al, 2008).

The first step in the initial investigation of landslides in the Atlantic was the collection and analysis of a large amount of available information useful for the identification and characterization of offshore landslides along the Atlantic coast of the U.S. Multibeam bathymetry, Geologic Long-Range Inclined Asdic (GLORIA) sidescan sonar imagery, a regional grid of high-resolution seismic profiles, and published accounts of sediment cores from the region was collected. The near-complete coverage of the Atlantic continental slope and rise by multibeam bathymetry provided a key high-quality and uniform data set that allowed for a more detailed and consistent view and assessment of the geomorphology of submarine landslides than had been possible in the past.

This landslide mapping results indicated that landslides along the U.S. Atlantic margin initiate predominantly in two morphologic settings, canyon (heads and sidewalls) and on the open continental slope. The canyon-sourced failures often have several canyons feeding a single deposit, and the deposits are smaller than those derived from the open slope. As a result, they are unlikely to cause tsunami events. Open-slope failures commonly originate on the middle and lower slope in 800-2,200 m depths. These landslides extend farther offshore, are thicker, and have considerably larger volumes than their canyon derived counterparts. As a result of the large volumes of material that sometimes fail, open slope-sourced slides are considered to have the most potential to initiate tsunami. However, a significant volume of material may also be mobilized in landslides associated with areas of salt diapirism as well.

Landslide source excavation areas along the margin identified in a detailed bathymetric Digital Elevation Model (DEM) ranged between 0.89 km^2 and 2410 km^2. The volumes range between 0.002 km^3 and 179 km^3. The area to volume relationship of these source excavations is almost linear (power law exponent close to 1), suggesting a fairly uniform failure thickness of a few tens of meters in each event, with only rare, deep excavating landslides. The cumulative volume distribution of the excavations is well described by a log-normal distribution rather than by a power-law commonly used to describe both subaerial and submarine landslides. A log-normal distribution centered on a volume of 0.86 km3, may indicate that landslides preferentially mobilize a moderate amount of material (on the order of 1 km3), rather than large landslides or very small ones. Conversely, the log-normal distribution may reflect a power law distribution modified by a size-dependent probability of observing landslide excavations in the bathymetry data. If the latter is the case, for example, a power law distribution with an exponent of 1.3 ± 0.3, modified by the conditional probability of success in identifying landslide excavations with increasing slide size, fits the observed size distribution equally well and predicts that geology of the source region has strong control on the size of the excavation. This exponent value corresponds favorably with the 1.2 ± 0.3 predicted for subaerial landslides in unconsolidated material. The log-normal distribution of the observed excavation volumes suggests that large landslides, which have the greatest potential to generate damaging tsunamis, occur infrequently along the margin. The reader is directed to Chaytor et al (2008) or the 2008 revision of the USGS report to the US NRC (Ten Brink et al, 2008) for additional details.

3. GEOLOGIC CONTROLS ON THE DISTRIBUTION OF SUBMARINE LANSLIDES ALONG THE U.S ATLANTIC CONTENTIAL MARGIN

Submarine landslides along the continental slope of the U.S. Atlantic margin are potential sources of tsunami hazard along the U.S. Atlantic coast. The magnitude of potential tsunamis depends on the volume and location of the landslides; and tsunami frequency depends on their recurrence interval. Unfortunately, both the size and recurrence interval of submarine landslides along the U.S. Atlantic margin is poorly understood.

Well-studied landslide-generated tsunamis in other parts of the world have been shown to generally be associated with earthquakes as a triggering mechanism. Because the size distribution and recurrence interval of earthquakes is generally better known than those for submarine landslides, if may be possible to estimate the size and

recurrence interval of submarine landslides from the size and recurrence interval of earthquakes in the near vicinity of the potential landslides. To do this it is necessary to calculate the maximum expected landslide size for a given earthquake magnitude, use recurrence interval of each magnitude of earthquake to estimate the recurrence interval of landslides of a certain size, and assume a threshold landslide size that can generate a destructive tsunami.

The maximum expected landslide size for a given earthquake magnitude is calculated in 3 ways: by slope stability analysis for catastrophic slope failure on the Atlantic continental margin, by using land-based compilation of maximum observed distance from earthquake to liquefaction, and by using land-based compilation of maximum observed area of earthquake-induced landslides. We find that the calculated distances and failure areas from the slope stability analysis is similar or slightly smaller than the maximum triggering distances and failure areas in subaerial observations. The results from all three methods compare well with the slope failure observations of the Mw=7.2, 1929 Grand Banks earthquake, the only historical tsunamigenic earthquake along the North American Atlantic margin.

The results further suggest that a Mw=7.5 earthquake (the largest expected earthquake in the eastern U.S.) must be located offshore and within 100 km of the continental slope to induce a catastrophic slope failure. Thus,based on this method a repeat of the 1755 Cape Anne and 1881 Charleston earthquakes would not be expected to cause landslides on the continental slope. The observed rate of seismicity offshore the U.S. Atlantic coast is very low with the exception of New England, where some microseismicity is observed. An extrapolation of annual strain rates from the Canadian Atlantic continental margin suggests that the New England margin may experience the equivalent of a magnitude 7 earthquake on average every 600–3000 yr. A minimum triggering earthquake magnitude of 5.5 is suggested for a sufficiently large submarine failure to generate a devastating tsunami and only if the epicenter is located within the continental slope. The reader is directed to Twitchell et al (2008) or the 2008 revision of the USGS report to the US NRC (Ten Brink et al, 2008) for additional details.

4. GEOMORPHOLOGY, STABILITY, AND MOBILITY FROM THE CURRITUCK LANDSLIDE

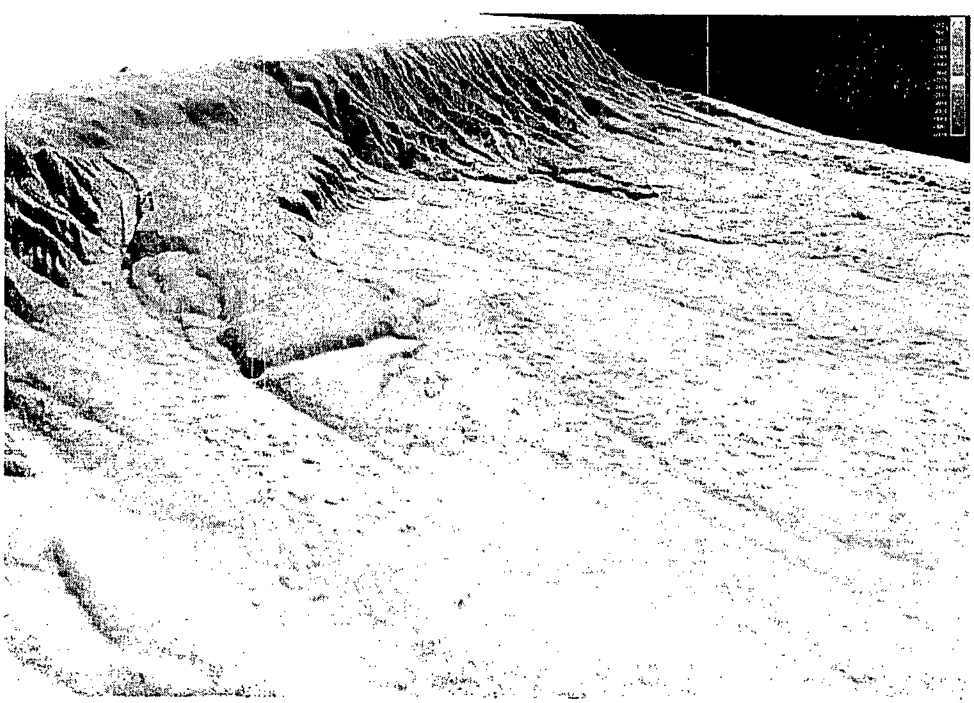

Figure 1 Image of the Carrituck Landslide Off the U.S. Atlantic Coast

In order to gain an initial understanding of the implications of the mapped landslides on the tsunami hazard along the Atlantic coast, a study to characterize and perform hydrodynamic modeling of the Carrituck landslide was undertaken. Tsunami magnitude depends strongly upon the size of the slide and how the landslide moves as it fails and flows. Therefore, the first step in the process was to determine the parameters needed for the tsunami generation and propagation modeling. This work had significant challenges because the initial geometry of the material was not known, it was unclear if there had been a single event or multiple events, and the properties of the geologic material were not well characterized. During this work several issues were considered and the researchers endeavored to answer the following multiple lines of inquiry. Ultimately a possible initial velocity and acceleration of the failed mass was developed from the mobility analyses.

The Currituck slide, located off the coast of Virginia, is a major submarine mass movement that was likely triggered during a time of low sea level. This slide removed a total volume of about 165 km^3 from this section of the continental slope. The departure zone still shows a very clean surface that dips at 4° and is only covered by a thin veneer of Holocene sediment. Multibeam bathymetric data suggest that this slide took place along three failures surfaces. The morphology of the source area suggests that the sediments were already at least normally consolidated at the time of failure. The slide debris covers an area as much as 55 km wide that extends 180 km from the estimated toe of the original slope.

The back analysis of slide initiation indicates that very high pore pressure, a strong earthquake, or both had to be generated to trigger slides on such a low failure plane angle. The shape of the failure plane, the fact that the surface is almost clear of any debris, and the mobility analysis, all support the argument that the slides took place nearly simultaneously. Potential causes for the generation of high pore pressures could be seepage forces from coastal aquifers, delta construction and related pore pressure generation due to the local sediment loading, gas hydrates, and earthquakes.

This slide, and its origin, is a spectacular example of the potential threat that submarine mass movements can pose to the US Atlantic coast and underline the need to further assess the potential for the generation of such large slides, like the Grand Banks 1927 landslide of similar volume. The reader is directed to Locat et al (2008) or the 2008 revision of the USGS report to the US NRC (Ten Brink et al, 2008) for additional details.

5. HYDRODYNAMIC MODELING OF TSUNAMIS FROM THE CURRITUCK LANDSLIDE

Once estimates of the important landslide parameters of the Currituck landslide offshore North Carolina had been developed in the research discussed above, preliminary hydrodynamic modeling of the slide was conducted for the purpose of determining the range of possible near-shore wave heights and understanding the possible impact of the continental shelf. A long and intermediate wave modeling package (COULWAVE) based on the non-linear Boussinesq equations was used to simulate the tsunami. This model includes procedures to incorporate bottom friction, wave breaking, and overland flow during runup. Potential tsunamis generated from the Currituck landslide were analyzed using four approaches: (1) the tsunami wave history was calculated from several different scenarios indicated by geotechnical stability and mobility analyses; (2) a sensitivity analysis was conducted to determine the effects of both landslide failure duration during generation and bottom friction along the continental shelf during propagation; (3) the wave history was calculated over a regional area to determine the propagation of energy oblique to the slide axis; and (4) a high resolution 1D model was developed to accurately model wave breaking and the combined influence of nonlinearity and dispersion during nearshore propagation and runup.

From the sensitivity analyses, it was concluded that the primary source parameter that affected tsunami severity for this case study is landslide volume, with failure duration having a secondary influence. Bottom friction during propagation across the continental shelf has a strong influence on the attenuation of the tsunami during propagation. The high-resolution 1D model also indicates that the tsunami undergoes non-linear fission prior to wave breaking, generating independent, short-period waves. Wave breaking occurs approximately 40-50 km offshore where a tsunami bore is formed that persists during runup. These analyses illustrate the complex nature

of landslide tsunamis, necessitating the use of detailed landslide stability/mobility models and higher-order hydrodynamic models to determine their hazard.

This study was undertaken early in the program and played an important role for the US NRC because the modeling allowed staff to understand the general implications of the initial landslide mapping results. It also helped to scope and focus the organization of the broader research program. The reader is directed to Geist et al (2008) or the 2008 revision of the USGS report to the US NRC (Ten Brink et al, 2008) for additional details.

6. ASSESSMENT OF SOURCE PROBABILITIES FOR POTENTIAL TSUNAMI AFFECTING THE U.S. COASTS

A key element of determining risk to a coastal facility from tsunami is understanding the likelihood that a tsunami will occur. Estimating the likelihood of tsunamis occurring along the U.S. Atlantic coast critically depends on knowledge of the annual probability of all potential tsunami sources that may impact a site of interest. To address this need a review of available information on both earthquake and landslide probabilities from potential sources that could generate local and transoceanic tsunamis has been performed. Estimating source probability includes defining both size and recurrence distributions for earthquakes and landslides. For the former distribution, source sizes are often distributed according to a truncated or tapered power-law relationship. For the latter distribution, sources are often assumed to occur in time according to a Poisson process, simplifying the way tsunami probabilities from individual sources can be aggregated. For the U.S. Atlantic coast, earthquake tsunami sources primarily occur at transoceanic distances along plate boundary faults. Probabilities for these sources are constrained from previous statistical studies of recorded seismicity.

In contrast, there is presently little information constraining landslide probabilities that may generate local tsunamis. Though there is significant uncertainty in tsunami source probabilities for the Atlantic, results from this study yield a comparative analysis of tsunami source recurrence rates that can form the basis for future probabilistic analyses. The reader is directed to Lee (2008) or the 2008 revision of the USGS report to the US NRC (Ten Brink et al, 2008) for additional details.

7. TIMING OF LARGE SUBMARINE LANDSLIDES ON THE ATLANTIC OCEAN MARGIN

The frequency of occurrence of tsunami due to specific sources, such as tsunamigenic landslide is a necessary and important parameter required for any probabilistic tsunami hazard assessment (PTHA). Thus, developing and understanding of the frequency of tsunamigenic landslides that may impact the U.S. coastline is an important element in reaching the long term program goal of developing PSHA tools for the Atlantic and Gulf coasts.

However, landslides are complicated and non-stationary process. Submarine landslides are distributed unevenly both in space and time. Spatially, they occur most commonly in fjords, active river deltas, submarine canyon-fan systems, the open continental slope, and on the flanks of oceanic volcanic islands. Temporally, they are influenced by the size, location, and sedimentology of migrating depocenters, changes in seafloor pressures and temperatures, variations in seismicity and volcanic activity, and changes in groundwater flow conditions.

In the past, the dominant factor influencing the times of submarine landslide occurrence has been glaciation. A review of known ages of submarine landslides along the margins of the Atlantic Ocean, augmented by a few ages from other submarine locations shows a relatively even distribution of large landslides with time from the last glacial maximum until about five thousand years after the end of glaciation. During the past 5000 years the frequency of occurrence is less by a factor of 1.7 to 3.5 than during or shortly after the last glacial/deglaciation period. Such an association likely exists because of the formation of thick deposits of sediment on the upper continental slope during glacial periods and increased seismicity caused by isostatic readjustment during and following deglaciation. Hydrate dissociation may play a role, as suggested previously in the literature, but the connection is unclear.

Developing an full understanding of the rate of past event, as well as the underlying causes, will continue to be an important research topic within the US NRC program. By understanding the underlying causes of past behavior, a more informed assessment of future rates will be possible. The reader is directed to Lee (2008) or the 2008 revision of the USGS report to the US NRC (Ten Brink et al, 2008) for additional details.

8. INVESTIGATION OF THE SOURCE OF THE 1755 LISBON EARTHQUAKE AND TSUNAMI USING TRANS-OCEANIC MODELING

Four large tsunamigenic earthquakes have occurred in the Atlantic Ocean west of Gibraltar in the last 300 years. The great Lisbon earthquake is one of these. However, there is no simple tectonic model for this area that explains the generation of these earthquakes. As a result, promising work undertaken to determine the source parameters of the 1755 Lisbon earthquake is of particular interest.

The Lisbon earthquake occurred in 1755 and had an estimated moment magnitude of 8.5 to 9.0 and was the most destructive earthquake in European history. In the near field associated tsunami run-up was reported to have reached 5-15 m along the Portuguese and Moroccan coasts and the run-up was significant at the Azores and Madeira Island. However, Lander et al. (2002) compiled a list of reports on the effect of the 1755 Lisbon tsunami in distant locations such as the Caribbean: Antigua, Saba, St. Martin at the northeast corner of the Caribbean had the highest flooding, but flooding was also reported from Santiago de Cuba and Samana Bay, Dominican Republic, in the north to Barbados in the south. There are also reports about flooding in Bonavista, north of St. Johns, Newfoundland. However, there are no reports of flooding anywhere else between Cuba and Newfoundland, despite the presence at that time of population centers in low-lying areas of the eastern U.S. and Canada.

A variety of past studies have hypothesized various sources for this earthquake based on geophysical surveys, modeling the near-field earthquake intensity, or tsunami effects. However, as part of this research, modeling of various sources is being undertaken to determine the source location and geometry that best fits the many far field records of tsunami impacts from the earthquake. Prior to this project there had not been an attempt to fit cross-ocean tsunami reports of the 1755 Lisbon earthquake to any of the proposed fault sources. Studying far field effects, as undertaken in this research, is advantageous because the tsunami is less influenced by near source bathymetry and is unaffected by triggered submarine landslides at the source. Source location, fault orientation and bathymetry are the main elements governing transatlantic tsunami propagation to sites along the U.S. East Coast, much more than distance from the source and continental shelf width.

Results of the far and near-field tsunami simulations undertaken and a relative amplitude comparison limit the earthquake source area to a region located south of the Gorringe Bank in the center of the Horseshoe Plain. This is in contrast with previously suggested sources such as Marqués de Pombal Fault, and Gulf of Cádiz Fault, which are farther east of the Horseshoe Plain. The earthquake was likely to be a thrust event on a fault striking ~345° and dipping to the ENE as opposed to the suggested earthquake source of the Gorringe Bank Fault, which trends NE-SW. Gorringe Bank, the Madeira-Tore Rise (MTR), and the Azores appear to have acted as topographic scatters for tsunami energy, shielding most of the U.S. Atlantic Coast from the 1755 Lisbon tsunami. Additional simulations to assess tsunami hazard to the U.S. Atlantic Coast from possible future earthquakes along the Azores-Iberia plate boundary indicate that sources west of the MTR and in the Gulf of Cadiz may affect the southeastern coast of the U.S. The Azores-Iberia plate boundary west of the MTR is characterized by strike-slip faults, not thrusts, but the Gulf of Cadiz may have thrust faults. Southern Florida seems to be at risk from sources located east of MTR and South of the Gorringe Bank, but it is mostly shielded by the Bahamas. The Gulf of Cádiz is another source area of potential tsunami hazard to the U.S. Atlantic Coast. Higher resolution near-shore bathymetry along the U.S. Atlantic Coast and the Caribbean as well as a detailed study of potential tsunami sources in the central west part of the Horseshoe Plain are necessary to verify the simulation results. The reader is directed to Barkana et al (2008) or the 2008 revision of the USGS report to the US NRC (Ten Brink et al, 2008) for additional details.

9. SUMMARY

This paper highlights some recent results from research performed for the US NRC tsunami research program. This information is provided as an overview of the types of projects undertaken in the program. The goal of the program is to develop an understanding of the deterministic hazard from tsunami along the U.S. Atlantic and Gulf coasts in the short term, with a long-term goal of developing the tools and parameters necessary to perform probabilistic seismic hazard assessments. The research here represents a wide variety of topics that are essential to ultimately meet these goals. For additional information, please see the companion paper in this conference (Kammerer et al, 2008).

REFERENCES

Barkana, R., ten Brink, U., and Linc, J. (2008) Far field tsunami simulations of the 1755 Lisbon earthquake: Implications for tsunami hazard to the U.S. East Coast and the Caribbean. Marine Geology Special Issue (submitted)

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Geist, E., Lynett, P., and Chaytor, J. (2008) Hydrodynamic Modeling of Tsunamis from the Currituck Landslide. Marine Geology Special Issue (submitted)

Geist, E., and Parsons, T. (2008) Assessment of Source Probabilities for Potential Tsunamis Affecting the U.S. Atlantic Coast. Marine Geology Special Issue (submitted)

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Lander, J. F., Whiteside, L. S., and Lockridge, P. A. (2002) A brief history of tsunamis in the Caribbean Sea: Science of Tusnami Hazards, v. 20, p. 57-94.

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Ten Brink, U., Twichell, D., Geist, E., Chaytor, J., Locat, J., Lee, H., Buczkowski, B., and Sansoucy, M., (2007) The current state of knowledge regarding potential tsunami sources affecting U.S. Atlantic and Gulf Coasts. U.S. Geological Survey Administrative Report to the United States Nuclear Regulatory Commission.

Rivera-Lugo, Richard

From: Kammerer, Annie
Sent: Tuesday, March 22, 2011 7:02 PM
To: Rivera-Lugo, Richard; Ake, Jon; (b)(6)
Cc: Roche, Robert
Subject: RE: Japan Earthquake Ground Motions

Categories: Green Category

No. But without knowing what stations these are, it's really hard to use the information in any meaningful way.

From: Rivera-Lugo, Richard
Sent: Tuesday, March 22, 2011 12:50 PM
To: Kammerer, Annie; Ake, Jon; (b)(6)
Cc: Roche, Robert
Subject: FW: Japan Earthquake Ground Motions

Annie, Jon and Jim,

I suppose that you probably have this information already, but nevertheless I wanted to share this e-mail that was sent by Praveen Malhotra, from Strong Motions, Inc. with information on the ground motions recorded during the Japan EQ from March 11th. Praveen is the instructor of some of the continuing education seminars offered by ASCE; he always keeps in touch with people who have taken his seminars.

Hopefully, this information will be of some use to you.

Best regards,
Richie

Richard Rivera-Lugo, EIT, MEM
Technical Assistant (Acting)
U.S. Nuclear Regulatory Commission – HQ
RES/DE
Ph. 301-251-7652
Fax 301-251-7420
Mail M.S. C5C07M
E-mail Richard.Rivera-Lugo@nrc.gov
Please consider the Environment before printing this e-mail.

From: Praveen Malhotra (StrongMotions Inc.) [mailto:praveen.malhotra@strongmotions.com]
Sent: Tuesday, March 22, 2011 7:07 AM
To: praveen.malhotra@strongmotions.com
Subject: Japan Earthquake Ground Motions

Hello Everyone,

I thought of sharing with you some information regarding ground motions from magnitude Mw 9 Tohoku Japan Earthquake.

Attached PDF shows response spectra from 25 strongly shaken sites in Japan. All response spectra are for 5% of critical damping.

000|412

Speaker notes can be viewed by placing the cursor on the top left corner of each slide.

Note the following:

Very high accelerations at some stations, as would be expected since ground motions are highly random and some sites are bound to see very strong shaking during an earthquake.
Significant de-amplification of high-frequencies at depth.
Large deformations as would be expected from an earthquake of this size.
Very large number of response cycles which again is expected from a magnitude Mw 9 Earthquake.

Feel free to ask any questions or provide feedback.

Regards,

Praveen

Dr. Praveen K. Malhotra, P.E.
StrongMotions Inc.
www.StrongMotions.com
781-363-3003

Bozin, Sunny

From: Nieh, Ho
Sent: Tuesday, March 22, 2011 4:38 PM
To: 'jim_reilly@carper.senate.gov'
Subject: Contact information

Dear Jim,

It was a pleasure speaking with you. We appreciate Senator Carper's and your interest in the NRC's actions in response to the recent nuclear events in Japan.

Please let me know if I can be of further assistance to your office.

Best regards,

Ho

Ho Nieh
Chief of Staff
Office of Commissioner William C. Ostendorff
U.S. Nuclear Regulatory Commission
(301) 415-1811 (office)
(b)(6)
(301) 415-1757 (fax)
ho.nieh@nrc.gov

000/413

Kock, Andrea

From: Pugh, Scott [Scott.Pugh@dhs.gov]
Sent: Tuesday, March 22, 2011 4:22 PM
To: Zeller, Randel
Cc: Dietrich, Rolf; Lightner, Eric; William Bryan; Caverly, R. James
Subject: More surprising Japanese news ...

From: www.itworld.com

A legacy from the 1800s leaves Tokyo facing blackouts

by Martyn Williams

East Japan entered its fifth day of power rationing on Friday, with no end to the planned blackouts in sight. The power shortages began last week when a massive earthquake and tsunami knocked nuclear power stations offline.

The local electrical utility can't make up the shortfall by importing power from another region, though, because Japan lacks a national power grid, a consequence of a decision taken in the late 1800s.

Japan's electricity system got its start in 1883 with the founding of Tokyo Electric Light Co. Demand quickly grew and in 1895 the company bought electricity generation equipment from Germany's AEG. In west Japan the same evolution was taking place, and Osaka Electric Lamp imported equipment from General Electric.

The AEG equipment produced electricity at Europe's 50Hz (hertz, or cycles per second) standard while the General Electric gear matched the U.S. 60Hz standard. That probably didn't seem important at the time -- after all, light bulbs are happy on either frequency -- but the impact of those decisions is being seen today.

All of eastern Japan, including Tokyo and the disaster-struck region to the north, is standardized on 50Hz supply while the rest of the country uses 60Hz.

Connecting the two grids is possible, but it requires frequency changing stations. Three such facilities exist, but they have a total capacity of 1 gigawatt.

When the quake hit, it shut down 11 reactors including three that were in operation at the Fukushima Daiichi plant that is now at the center of Japan's nuclear problems. With the 11 reactors offline, 9.7GW was gone from eastern Japan's electricity production capacity.

And that's the root of Tokyo's current electricity problems: utility companies in west Japan are unable to make up for all of the lost power.

On Monday the government appealed to east Japan to cut consumption and the region responded. Lighting has been reduced in offices, neon signs are dark and passengers in some stations are being asked to take the stairs instead of the escalator.

A series of daily rolling blackouts was also introduced to keep total demand below supply. By switching off power to 10 million homes around Tokyo, the utility company is able to keep the lights burning in the capital.
Or, at least that's the theory.

Tokyo Electric Power Co. (TEPCO) warned on Thursday that an unpredictable and massive blackout faced Tokyo that evening. The cold weather had led many to switch on heaters and demand was getting dangerously close to TEPCO's remaining 33.5GW capacity.

Tokyo responded. Almost immediately offices let people out early, railway operators cut services and unneeded lights and appliances were switched off in homes. The city escaped the predicted power cuts, but for how long that can continue is unclear.

TEPCO has warned the power cuts will last until at least April, and even after that the need to conserve energy will continue.

Several of the Fukushima Daiichi reactors will likely never come back online. Tokyo's energy worries are largely dependant on when or if the other power stations can be restarted.

000/414

Martyn Williams covers Japan and general technology breaking news for The IDG News Service. *Follow Martyn on Twitter at @martyn_williams. Martyn's e-mail address is martyn_williams@idg.com*

Scott Pugh
Interagency Programs Office
Science & Technology Directorate
U.S. Department of Homeland Security
Washington, DC 20258
202-254-2288 (office)
(b)(6)

Zorn, Jason

From: Zorn, Jason
Sent: Tuesday, March 22, 2011 7:11 AM
To: Kock, Andrea
Subject: RE: Recent FOIA Requests

No worries. Safe travels!

From: Kock, Andrea
Sent: Tuesday, March 22, 2011 7:10 AM
To: Zorn, Jason
Subject: Re: Recent FOIA Requests

Okay then I don't have that much. Will forward shortly. Have a good couple of days

Sent from NRC blackberry
Andrea Kock
(b)(6)

From: Zorn, Jason
To: Kock, Andrea
Sent: Tue Mar 22 06:28:56 2011
Subject: Re: Recent FOIA Requests

Yes

From: Kock, Andrea
To: Zorn, Jason
Sent: Mon Mar 21 22:02:53 2011
Subject: RE: Recent FOIA Requests

Jason: I'm going to try to get you any documents I have tomorrow morning before my flight. But, I have a question. In previous FOIAs I have been involved with, we made an assumption that the originator of an email would produce the email. For example, emails that I received that Mike originated I would not produce- we would assume the originator would provide the email. This saves us all a little time and eliminates duplicates. Should I make the same assumption here?

From: Zorn, Jason
Sent: Monday, March 21, 2011 2:59 PM
To: Ostendorff, William; Franovich, Mike; Warnick, Greg; Nieh, Ho; Kock, Andrea
Cc: Herr, Linda; Bozin, Sunny
Subject: Recent FOIA Requests

All

As you probably heard me discuss, we received a number of FOIA requests last week related to the Japan event. I will warn you at the outset that requestors (the Associated Press) have requested an "expedited" review, and secondly, that the request appears to be extensive and could be burdensome for some of you to produce emails on this subject. We have been asked to provide a response by **March 24th – this Thursday**. There are 4 requests:

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1. All documents created between March 11, 2011, and March 16, 2011 (including emails) referencing the words "Vogtle and Japan" or "Summer and Japan."

2. Communications from March 11, 2011, to March 16, 2011, between the NRC and DOE, GE Energy and Hitachi-GE Nuclear Energy pertaining to the Japanese nuclear incident.

3. "Internal" NRC communications from March 11, 2011, to March 16, 2011, between the Chairman, the 4 Commissioners, their staffs, the Office of Public Affairs, and staff offices such as NRR, NSIR, and the Ops Center pertaining to the Japanese nuclear incident. In my view, this only includes communications that go to or originate from outside of this office, not communications internal to this office. For example, emails from Mike with his summary of the daily meetings to the Commissioner and others would not be included. But, if anyone has communicated to others outside of the office by email, that would be included.

4. Communications between the NRC and "government counterparts" in Japan pertaining to the Japanese nuclear incident. This is specified to communications between the Commission or their staffs.

Please remember that this is an initial scoping review to identify documents. It may be that a FOIA exception applies to the document, so it would be identified to the requestor, but still withheld. I will bring this up for discussion at tomorrow's morning meeting so we can get some alignment, and I can also provide copies of the original request if you need further clarification.

Jason

Nelson, Robert

From: Nelson, Robert
Sent: Tuesday, March 22, 2011 8:29 AM
To: Roberts, Darrell
Subject: RE: Annual Assessment Meeting Information.

I think it's a great idea if we can get someone to do it. I'll discuss with OPA. I suspect that OPA will agree but not take the lead.

NELSON

From: Roberts, Darrell
Sent: Monday, March 21, 2011 6:18 PM
To: Nelson, Robert
Subject: FW: Annual Assessment Meeting Information.

Bob,

Please see Jim's e-mail below. What are your thoughts on the regions having poster boards or pamphlets developed related to the event (or our event response, or whatever we think is appropriate for public consumption) – for our upcoming Annual Assessment Meetings. The first of them is this week (Region II – Robinson on 3/24). Obviously, that's short notice, but with many of the other plants' coming up in April and beyond, perhaps there's an opportunity for our public affairs folks to provide boards for regional office use.

Thoughts?

DJR

From: Clifford, James
Sent: Monday, March 21, 2011 6:13 PM
To: Burritt, Arthur; Dentel, Glenn; Gray, Mel; Krohn, Paul; Jackson, Donald; Bellamy, Ronald; Powell, Raymond
Cc: Screnci, Diane; Roberts, Darrell
Subject: RE: Annual Assessment Meeting Information.

Thanks. FYI, Darrell (as the Region POC) will be reaching out to Bob Nelson (as the sponsor for the Agency's communications team for developing background information for the AAMs) with the idea we discussed to collect Bill Borchardt's talking notes for his slides, with the idea of consolidating them into posterboards and talking points for the managers at the AAMs. We'll also look at getting access to the video of the Commission meeting to collect the Qs and As between Bill and the Commission.

Jim Clifford
Deputy Director
Division of Reactor Projects
Region I

From: Burritt, Arthur
Sent: Monday, March 21, 2011 5:29 PM
To: Clifford, James; Roberts, Darrell
Cc: Screnci, Diane
Subject: FW: Annual Assessment Meeting Information.

FYI

000/416

From: Cline, Leonard
Sent: Monday, March 21, 2011 2:44 PM
To: Burritt, Arthur
Cc: Turilin, Andrey
Subject: Annual Assessment Meeting Information.

Below is the point of contact for AAM security. I spoke to him today. We need to provide him a description of who, what, when, where and why for the meeting to include the numbers of people we are expecting, the type of crowd we are inspecting, and if we are looking for anything in particular, a description of what support we are looking for. We need to get this info to him by the end of this week. He will then make some phone calls to LLEA and possibly talk to the residents about what their expectations are. He thought that he was involved in previous meetings at Salem and Hope Creek, but we did not discuss. I plan to solicit some information from him as to what type of security was provided at that meeting. We can discuss the who, what, when, where, why and how tomorrow.

As far as the Robinson AAM. I spoke to the BC (Randy Musser), he was the only one available (The SPE is out in the field and will not be/has not been involved with the AAM). They have no specific plans. Robinson is a column 3 plant so they are planning a standard meeting using the website slides. He does not like open houses and even if they could have done one they would not have done that alone. The do not plan on putting together anything specific, but did say he plans on reviewing the information on the Japan sharepoint to answer any questions that may come up. They plan to make available hard copies of the already publically available FAQs and press releases regarding the events. They had not yet considered what specific brochures that they will provide at the meeting..

From: Simpler, Gary
Sent: Monday, March 21, 2011 1:15 PM
To: Cline, Leonard
Subject: TEST

Gary Simpler
Facilities Security Specialist
U.S. NUCLEAR REGULATORY COMMISSION
ADM/DFS/FSB (T6 E-38)
301-415-5002 (Office)
(b)(6) *(Cell)*
Gary.Simpler@nrc.gov
NRC Blackberry (b)(6)

From:	Droggitis, Spiros
Sent:	Wednesday, March 23, 2011 11:19 AM
To:	Powell, Amy; Decker, David; Riley (OCA), Timothy
Subject:	FW: DNDO News 3/23/2011
Attachments:	DNDO NEWS 3-23-11.htm

From: Bolling, Lloyd [mailto:Lloyd.Bolling@dhs.gov]
Sent: Wednesday, March 23, 2011 11:16 AM
To: Layton, Michael; Reis, Terrence; Jones, Cynthia; Wastler, Sandra; Jackson, Gerard
Cc: Droggitis, Spiros; Dembek, Stephen; Owens, Janice; Casey, Timothy; Breskovic, Clarence
Subject: DNDO News 3/23/2011

Attached is the DNDO News for Wednesday, March 23, 2011.

Summary of news items:

1. DHS Inspector General Report criticizes component agencies for radiation detector purchasing and inventory practices.
2. Jordan Receives Radioactive Detection Equipment from U.S.
3. U.S. Diplomat says minuscule fallout reaches California.
4. California company announces agreement to sell radiation detectors to individuals and agencies in Japan.
5. Morocco hosts an international exercise aimed at combating illicit trafficking in radioactive materials.

Lloyd Bolling, NRC Liaison
Operations Support Directorate
Domestic Nuclear Detection Office
Department of Homeland Security
Phone: 202-254-7123
Blackberry (b)(6)
Fax: 202-254-7752
Lloyd.Bolling@dhs.gov

000/417

March 23, 2011 DNDO News Brief

DHS Needs to Consolidate Nuclear Detection Purchases, Report Finds
Congressional Quarterly Staff

The different arms of the DHS need to better coordinate their purchasing and inventory for equipment used to detect explosives, metal and radiation, according to a recent inspector general's report (Attached).

Currently, the department has about $3.2 billion in detection equipment spread across eight component agencies, according to the OIG report. The TSA, CBP and U.S. Citizenship and Immigration Services all have similar, small X-ray machine models in their inventories, and several of the DHS components have similar walk-through metal detectors. But none of the components pool their buying power to get a better price for the equipment, and it is all inventoried in separate systems, the report said.
Unable to view consolidated inventory information on detection equipment, the department's headquarters has to make calls to track agencies' equipment. To improve that process, the inspector general advised the department to establish a council to develop a data dictionary that would standardize the department's inventory accounts. The council would also make sure purchases for similar detection equipment are consolidated.

The report also recommended DHS revive a council that could identify common requirements among the components. The department had such a council from 2003 through 2006, but it disbanded after its chairman was assigned to other duties. If fewer models of equipment are involved in the department's operations, support costs for maintenance and training could be reduced, according to the report.

The department accepted the inspector general's recommendations and indicated there are talks about reestablishing a joint requirements council, and that it is analyzing its detection equipment.

Jordan Receives Radioactive Detection Equipment from U.S.
Zawya - The Jordan Nuclear Regulatory Commission on Tuesday received from the U.S. Embassy new equipment for detection of radioactive material at airports and border posts. The new equipment will be used to detect illicit trafficking of nuclear material at Jordan's border crossings.
http://www.zawya.com/story.cfm/sidZAWYA20110323060814

Diplomat Says Minuscule Fallout Reaches California
George Jahn, John Heilprin, Ventura County Star - A diplomat who has access to radiation tracking by the U.N.'s Comprehensive Test Ban Treaty Organization told The Associated Press in Vienna that initial readings show tiny amounts of radiation have reached California.
http://m.vcstar.com/news/2011/mar/22/diplomat-says-minuscule-fallout-reaches-calif/

Universal Detection Technology Announces Agreement for Radiation
International Business Times - Universal Detection Technology announced that they signed an agreement for radiation detection distribution to individuals and agencies in Japan.
http://www.ibtimes.com/articles/125479/20110322/universal-detection-technology-undt-announces-agreement-for-radiation-detection-distribution-in-japa.htm

Rabat Hosts International Exercise On Combating Traffic In Radioactive Materials
Bernama – Beginning on Tuesday, Morocco is hosting an international exercise aimed at enhancing national capacities in combating illicit trafficking in radioactive materials.
http://www.bernama.com.my/bernama/v5/newsindex.php?id=573030

From: Giessner, John
Sent: Wednesday, March 23, 2011 10:48 AM
To: LIA03 Hoc; Heard, Robert
Cc: Miller, Marie
Subject: RE: Phone Pick-Up

My temporary phone is (b)(6) till my Thursday flight in the morning. My blackberry is non-functional so (b)(6) will not work right now. I will provide my new number when I arrive in Japan.

000418

Nelson, Robert

From: Nelson, Robert
Sent: Wednesday, March 23, 2011 9:53 AM
To: Burnell, Scott
Cc: Mozafari, Brenda; Markley, Michael; Broaddus, Doug; Saba, Farideh
Subject: RE: Could you help me find answers?
Attachments: image001.jpg; image002.jpg

Please hold while DORL reviews. I'll get back to you.

NELSON

From: Burnell, Scott
Sent: Wednesday, March 23, 2011 9:49 AM
To: Broaddus, Doug; Saba, Farideh
Cc: Mozafari, Brenda; Markley, Michael; Nelson, Robert
Subject: RE: Could you help me find answers?
Importance: High

Folks;

Based on this thread and existing Mark I Q&A, our basic answer seems to be this:

The NRC's preliminary review of available information indicates a test similar to the one UCS describes took place at Brunswick. Given the passage of more than 30 years, including the efforts of the NRC's Containment Performance Improvement program in the late 1980s and early 1990s, that test's relevance to U.S. plants and current events is considered low. As part of the CPI effort, all U.S. BWRs with Mark I containments installed hardened vents to ensure containment integrity would be maintained under accident conditions.

Please let me know if that's acceptable. Thanks.

Scott

From: Broaddus, Doug
Sent: Tuesday, March 22, 2011 6:54 PM
To: Saba, Farideh
Cc: Mozafari, Brenda; Burnell, Scott; Markley, Michael; Nelson, Robert
Subject: RE: Could you help me find answers?

I reviewed the report, as well, and it appears to only address the successful conduct of the test to 71.5 psi, and does not indicate that an earlier attempt was unsuccessful due to leakage that prevented achieving the full test pressure. The report does indicate that the Structural Integrity Test (SIT) was performed in conjunction with an Integrated Leak Rate Test (ILRT) (see page 5.1). However, this report only provides the results of the SIT, and indicates that the results of the ILRT are provided in a separate report. A discussion of leakage during the test would more likely be in the report prepared for the ILRT results. Do you know if the ILRT report was ever submitted on the docket?

Doug

From: Saba, Farideh
Sent: Tuesday, March 22, 2011 6:26 PM

000/419

To: Burnell, Scott; Markley, Michael; Nelson, Robert
Cc: Broaddus, Doug; Mozafari, Brenda
Subject: RE: Could you help me find answers?

I understand. I have sent this document FYI. I have glanced through the document, but I could not find any information related to leakage from the containment to the reactor building.

Farideh E. Saba, P.E.
Senior Project Manager
NRC/ADRO/NRR/DORL
301-415-1447
Mail Stop O-8G9A
Farideh.Saba@NRC.GOV

From: Burnell, Scott
Sent: Tuesday, March 22, 2011 6:02 PM
To: Saba, Farideh; Markley, Michael; Nelson, Robert
Cc: Broaddus, Doug; Mozafari, Brenda
Subject: Re: Could you help me find answers?
Importance: High

Licensee documents should come directly from them in a case like this, not through us. We could use the documents to inform our answers, of course.

Sent from an NRC Blackberry
Scott Burnell
(b)(6)

From: Saba, Farideh
To: Markley, Michael; Nelson, Robert; Burnell, Scott
Cc: Broaddus, Doug; Mozafari, Brenda
Sent: Tue Mar 22 17:57:59 2011
Subject: RE: Could you help me find answers?

FYI, the media has asked the licensee the same question. The licensee has found an old document that may have the information related to the containment testing. The licensee has scanned the document and sent me in two emails (big files). I will forward this document in the separate emails. It does not appear that this document is not a publicly available document. However, the licensee itself may provide this document to the media.

Farideh E. Saba, P.E.
Senior Project Manager
NRC/ADRO/NRR/DORL
301-415-1447
Mail Stop O-8G9A
Farideh.Saba@NRC.GOV

From: Markley, Michael
Sent: Tuesday, March 22, 2011 3:50 PM
To: Saba, Farideh; Mozafari, Brenda
Cc: Broaddus, Doug
Subject: FW: Could you help me find answers?

Quick Turnaround: Please see the note below. Any insights on the Brunswick aspect?

From: Nelson, Robert
Sent: Tuesday, March 22, 2011 2:08 PM
To: Burnell, Scott
Cc: Markley, Michael
Subject: RE: Could you help me find answers?

NELSON

From: Burnell, Scott
Sent: Tuesday, March 22, 2011 11:18 AM
To: Nelson, Robert; Meighan, Sean; Thomas, Eric
Subject: FW: Could you help me find answers?
Importance: High

Bob et al;

Deadline's actually noon tomorrow, but with a research project like this that's not much help. I would think we could focus on the end result – improved drywell seals, if my quick read of the UCS item is worth anything. Thanks!

Scott

From: Xie, Yanmei [mailto:yanmei_xie@platts.com]
Sent: Tuesday, March 22, 2011 10:57 AM
To: Burnell, Scott; Brenner, Eliot
Subject: FW: Could you help me find answers?

And my deadline is 5pm today.

Yanmei Xie

Associate Editor

Platts Nuclear Publications

Office: (202) 383-2161

Mobile: (b)(6)

www.platts.com

From: Xie, Yanmei
Sent: Tuesday, March 22, 2011 10:56 AM
To: 'Brenner, Eliot'; 'Burnell, Scott'
Subject: Could you help me find answers?

Hi, Eliot and Scott,

I hope you guys were able to catch some much needed rest during the weekend. I feel a little ashamed to say that my weekend was actually quite relaxing, while two of my colleagues were on duty.

The Union of Concerned Scientists said "A little-known test performed decades ago at the Brunswick" could explain the hydrogen explosions at Japan's Fukushima Daiichi plant. See the UCS analysis below. Could you help me get answers to the following questions?

1. Did the test actually happen? If so,
2. Why was the test preformed and when was it performed?
3. Did the UCS analysis below accurate reflect the test and the test result?
4. Did Brunswick report the test results to NRC or the industry? If so,
5. Did either the NRC or industry require or suggestion any modifications to mitigate the risk?
6. Did Brunswick take measures to mitigate the risk?

Your help is greatly appreciated!

Possible Cause of Reactor Building Explosions

| by Dave Lochbaum | nuclear power | nuclear power safety | Japan nuclear |

Dramatic videos show the explosions that severely damaged the reactor buildings at first Unit 1 and then Unit 3 at the stricken Fukushima Dai-Ichi nuclear plant in Japan. The explosions are attibuted to the ignition of hydrogen gas that collected within the reactor buildings. This was early in the crisis, and before the spent fuel pools are thought to have lost water and started producing hydrogen.

The hydrogen was likely produced by damaged fuel rods in the reactor core. To reduce pressure in the reactor vessel, some of that hydrogen was released from the vessel into the primary containment structure of the reactor.

A key, unsolved riddle is how a significant amount of hydrogen escaped from the primary containment into the reactor building, and how this low-probability event would have happened in mulitple reactors.

How Hydrogen Got into Primary Containment

Figure 1 shows a cross-sectional view of a boiling water reactor with a Mark I containment like that at Fukushima Dai-Ichi. The reactor core is housed within a metal reactor vessel. The reactor vessel is enclosed within the primary containment structure. The reactor building completely surrounds the containment structure. The reactor building walls are made of 18 to 30 inch-thick concrete up to the elevation of the refueling platform. The walls are made of metal from that elevation to the roof.

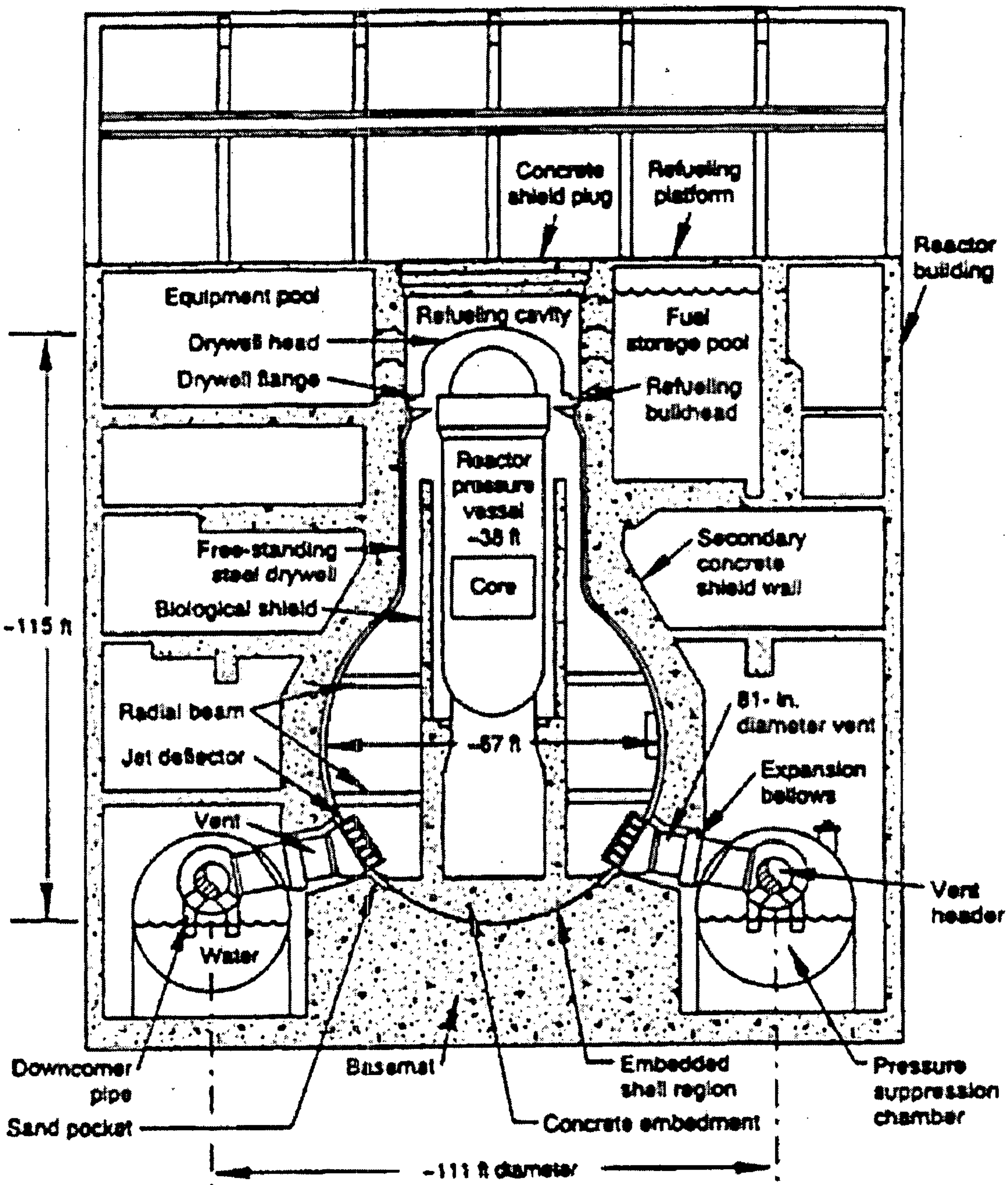

Figure 1

The hydrogen gas most likely came from a chemical reaction between water and the metal cladding of fuel rods in the reactor cores when the water level inside the reactor vessels dropped low enough to expose at least the upper core regions.The hydrogen gas initially collected in the reactor vessel.

To cool the fuel in the reactor, workers attempted to pump seawater into the reactor vessel. As pressure inside the reactor vessel increased, it kept water from flowing into the reactor. Periodically, workers opened valves to vent steam and gas from the reactor vessel to into the pressure suppression chamber (also called the torus). The gas, including hydrogen, collected in the torus and periodically equalized with the air space in the drywell.

When pressure in the primary containment (the combination of the drywell and the torus) rose too high, workers vented the containment to the atmosphere. This vent piping passed through the reactor building, but discharged well outside of it, and should not have led to a hydrogen buildup inside the building.

How Hydrogen May Have Gotten from Primary Containment into the Reactor Building

The destruction of the Unit 1 and 3 reactor buildings appears to have been caused by hydrogen explosions. As noted above, an unanswered question is how the hydrogen got into the reactor buildings. A little-known test performed decades ago at the Brunswick nuclear plant in North Carolina may hold the key to answering that question.

To satisfy a requirement in the American Society of Mechanical Engineers (ASME) code for prototype containment designs, workers performed a structual integirty test on the reactor at Brunswick in the 1970s.

The primary containment structure at Brunswick was designed to withstand an internal pressure of 62 pounds per square inch (psi). The ASME code required it to be tested at 71 psi. This test involved pumping air into the containment structure until the pressure rose to 71 psi. The pumps would then be turned off and the pressure would be monitored for several hours to verify that it remained fairly constant, indicating that the primary containment was intact and not leaking. During this time, workers would record data from strain gauges and other instrumentation to verify that structural loads were properly distributed.

But as workers increased the containment pressure they encountered a problem. The pressure stopped increasing and remained constant at 70 psi. The pumps continued to push air into the containment, but its pressure just stopped increasing. This unexpected plateau started a hunt for air leaking from the containment somewhere.

A hissing sound attracted workers to the top of the containment structure. They identified air leaking through the drywell flange area (see Figure 1). The metal drywell head (see Figure 2) is bolted to the metal drywell with a rubber O-ring between the surfaces to provide a good seal fit.

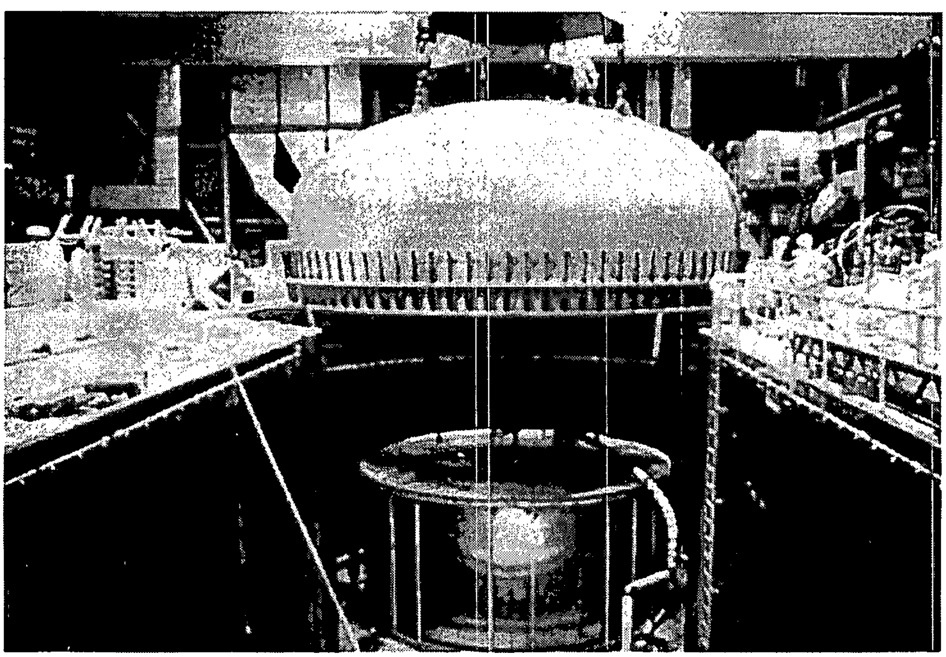

Figure 2

Workers found that the containment pressure of 70 psi pushing upward against the inner dome of the drywell head lifted it off the drywell flange enough to provide a pathway for air to leak from the containment. That air leaked into the area labeled refueling cavity in Figure 1. The refueling cavity is located outside the primary containment but inside the reactor building.

At Brunswick, workers tightened the drywell head bolts beyond the amount specified in the reactor plans in order to reduce the leak rate and continue the test. While workers conducted pressure tests at all nuclear reactors prior to initial startup and periodically thereafter, these tests were performed at or below the containment design-pressure of 62 psi. So none of them reached the pressure that caused the leak around the drywell head.

In other words, had Brunswick not featured a prototype containment design, its initial and recurring pressure tests would have been conducted at 62 psi, not 71 psi. Leaking from the drywell head was not observed until the containment pressure rose to 70 psi.

How does this Brunswick containment testing experience relate to the reactor building explosions experienced at Fukushima Dai-Ichi Units 1 and 3?

Like Brunswick, the containment design at those reactors features a drywell head bolted onto the lower portion of the drywell. Workers at these reactors faced siginficant problems cooling the reactor cores. The combined effects of the earthquake and tsunami left the reactors without ac electrical power. The only dc-powered (i.e., battery-powered) backup system was lost when the batteries were exhausted. Workers turned to their only remaining option: injecting sea water into the reactor vessels to cool the reactor cores.

The pumps used to pump seawater into the vessel operated at low pressure. When seawater entered the reactor vessel, it was heated by the hot reactor core to the point of boiling. Steam produced by the boiling increased the pressure inside the reactor vessel. To prevent this rising pressure from hindering seawater from being pumped into reactor, workers periodically vented the reactor vessel. This carried steam and gas, including hydrogen, into the primary containment. This flow in turn increased the pressure inside containment. When containment pressure rose too high, workers vented the containment to the atmosphere.

The workers properly sought to minimize the amount of gas they vented from containment to the atmosphere to lessen the amount of radiation released. They did this by allowing the containment pressure to rise as high as tolerable between ventings.

It is possible that the containment pressures rose high enough to replicate the Brunswick experience by lifting the drywell head enough to allow hydrogen and other gases to leak into the refueling cavity and reactor building. If so, hydrogen could build up to an explosive mixture.

This tragedy will be closely examined for its causes. That scrutiny must determine how hydrogen got into the reactor building early in the crisis. The drywell head pathway may be that answer.

Answering this question is critical to prevent hydrogen explosions at the other reactors at Fukushima.

If this mechanism is the cause of the leak, it could be averted easily and effectively simply by changing the venting procedures so that workers vent the containment pressure to the atmosphere more frequently and do not let it build up to such high level. Taking such action might moderately increase the amount of radioactive gases vented into the atmosphere, but could eliminate a source of hydrogen inside the reactor buildings that could cause another explosion.

Authorities should launch an investigation to pinpoint the source of the hydrogen leak to eliminate this risk in the future. But in the meantime, since the Brunswick test showed that this containment is vulnerable to high-

pressure leaking, Tokyo Electric Power Co. can and should take immediate steps to avoid creating such a leak by changing its procedures to vent the containment before it builds up to such high pressure (70 psi).

Yanmei Xie

Associate Editor

Platts Nuclear Publications

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Mobile: (b)(6)

www.platts.com

Nelson, Robert

From: Nelson, Robert
Sent: Wednesday, March 23, 2011 8:40 AM
To: Markley, Michael; Broaddus, Doug; Saba, Farideh
Cc: Mozafari, Brenda; Burnell, Scott; Oesterle, Eric
Subject: RE: Could you help me find answers?
Attachments: image001.jpg; image002.jpg

I agree

NELSON

From: Markley, Michael
Sent: Wednesday, March 23, 2011 7:56 AM
To: Broaddus, Doug; Saba, Farideh
Cc: Mozafari, Brenda; Burnell, Scott; Nelson, Robert; Oesterle, Eric; Nelson, Robert
Subject: RE: Could you help me find answers?

Farideh,

We need the licensee's information on the docket. Otherwise, we are out of process in being able to respond. How are you going to handle a FOIA if it is not docketed? This could turn ugly if we get out of process.

In inspection space, we can look at documents but not take possession. In licensing space, we need docketed information and a proprietary review, if needed.

Mike

From: Broaddus, Doug
Sent: Tuesday, March 22, 2011 6:54 PM
To: Saba, Farideh
Cc: Mozafari, Brenda; Burnell, Scott; Markley, Michael; Nelson, Robert
Subject: RE: Could you help me find answers?

I reviewed the report, as well, and it appears to only address the successful conduct of the test to 71.5 psi, and does not indicate that an earlier attempt was unsuccessful due to leakage that prevented achieving the full test pressure. The report does indicate that the Structural Integrity Test (SIT) was performed in conjunction with an Integrated Leak Rate Test (ILRT) (see page 5.1). However, this report only provides the results of the SIT, and indicates that the results of the ILRT are provided in a separate report. A discussion of leakage during the test would more likely be in the report prepared for the ILRT results. Do you know if the ILRT report was ever submitted on the docket?

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To: Burnell, Scott; Markley, Michael; Nelson, Robert
Cc: Broaddus, Doug; Mozafari, Brenda
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I understand. I have sent this document FYI. I have glanced through the document, but I could not find any information related to leakage from the containment to the reactor building.

000/420

Farideh E. Saba, P.E.
Senior Project Manager
NRC/ADRO/NRR/DORL
301-415-1447
Mail Stop O-8G9A
Farideh.Saba@NRC.GOV

From: Burnell, Scott
Sent: Tuesday, March 22, 2011 6:02 PM
To: Saba, Farideh; Markley, Michael; Nelson, Robert
Cc: Broaddus, Doug; Mozafari, Brenda
Subject: Re: Could you help me find answers?
Importance: High

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To: Saba, Farideh; Mozafari, Brenda
Cc: Broaddus, Doug
Subject: FW: Could you help me find answers?

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To: Burnell, Scott

Cc: Markley, Michael
Subject: RE: Could you help me find answers?

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To: Nelson, Robert; Meighan, Sean; Thomas, Eric
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Importance: High

Bob et al;

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Scott

From: Xie, Yanmei [mailto:yanmei_xie@platts.com]
Sent: Tuesday, March 22, 2011 10:57 AM
To: Burnell, Scott; Brenner, Eliot
Subject: FW: Could you help me find answers?

And my deadline is 5pm today.

Yanmei Xie

Associate Editor

Platts Nuclear Publications

Office: (202) 383-2161

Mobile: (b)(6)

www.platts.com

From: Xie, Yanmei
Sent: Tuesday, March 22, 2011 10:56 AM
To: 'Brenner, Eliot'; 'Burnell, Scott'
Subject: Could you help me find answers?

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Possible Cause of Reactor Building Explosions

| by Dave Lochbaum | nuclear power | nuclear power safety | Japan nuclear |

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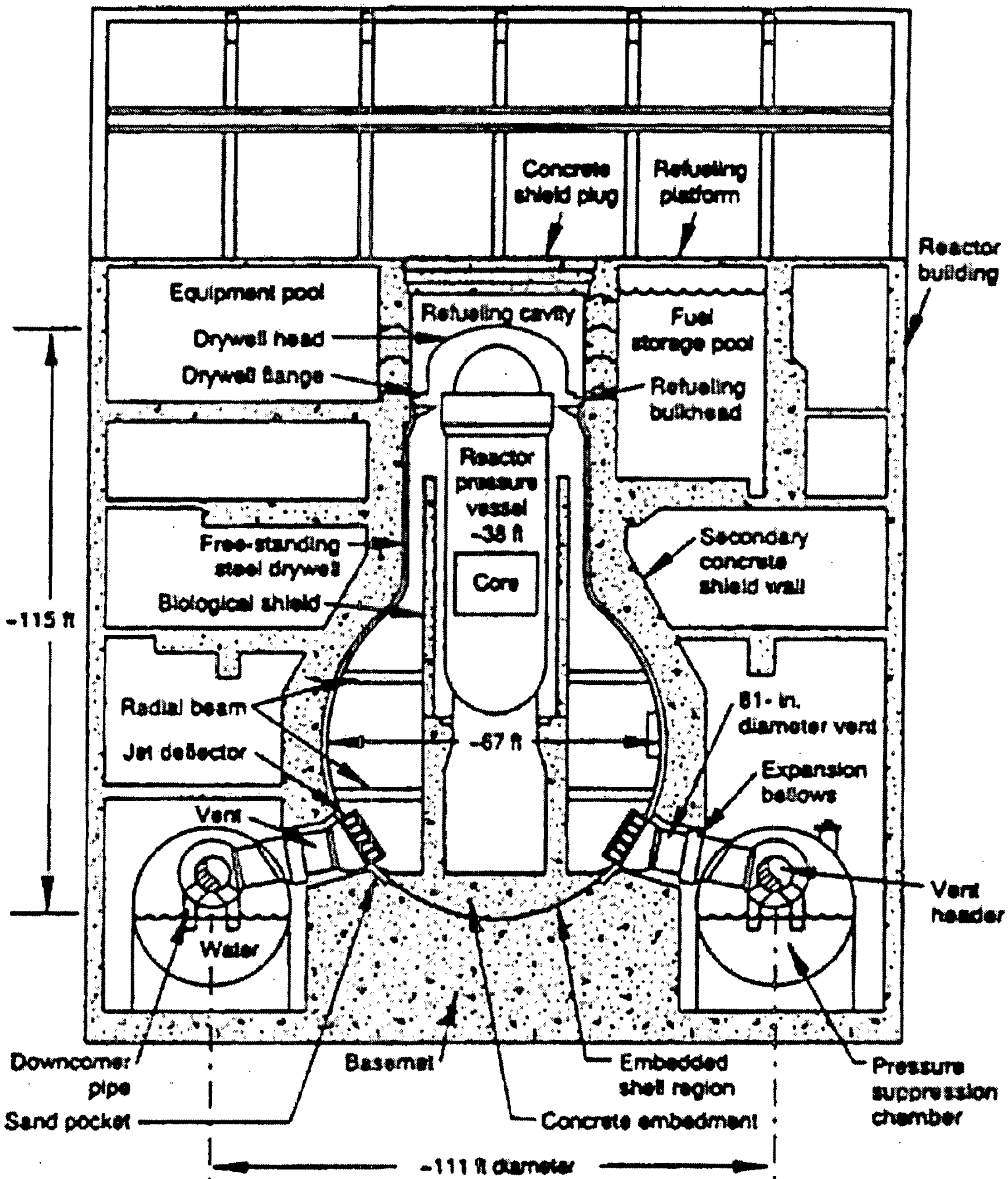

Figure 1

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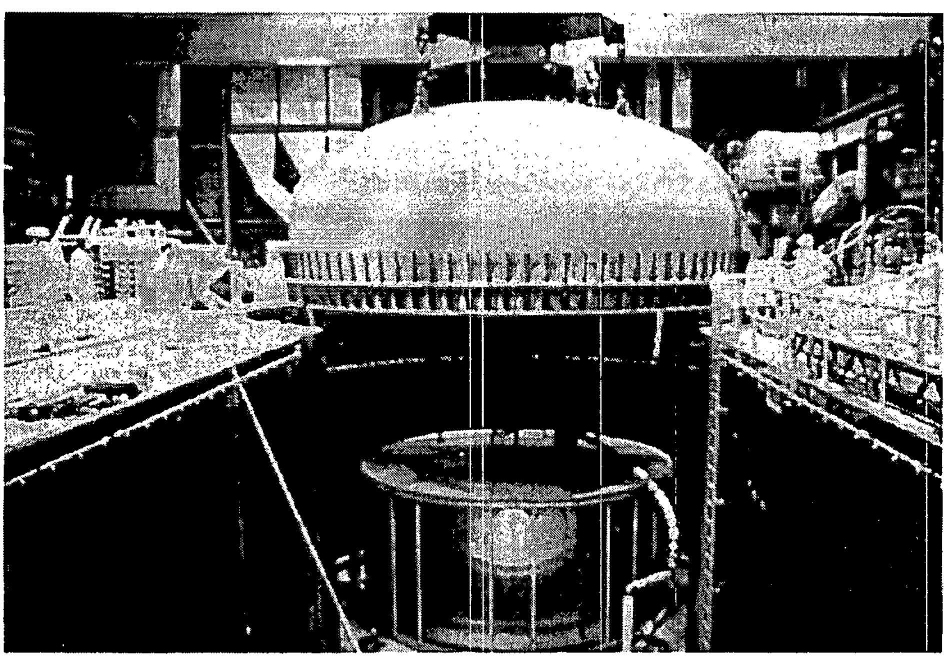

Figure 2

Workers found that the containment pressure of 70 psi pushing upward against the inner dome of the drywell head lifted it off the drywell flange enough to provide a pathway for air to leak from the containment. That air leaked into the area labeled refueling cavity in Figure 1. The refueling cavity is located outside the primary containment but inside the reactor building.

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pressure leaking, Tokyo Electric Power Co. can and should take immediate steps to avoid creating such a leak by changing its procedures to vent the containment before it builds up to such high pressure (70 psi).

Yanmei Xie

Associate Editor

Platts Nuclear Publications

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Mobile: (b)(6)

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Rihm, Roger

From: Rihm, Roger
Sent: Wednesday, March 23, 2011 2:12 PM
To: Biggins, James
Subject: RE: Cancel GT Support Actions

Will do, although we plan to prepare 1 interim response for all 3 of Markey's letters in house. Final letters will (presumably) be some months away.

From: Biggins, James
Sent: Wednesday, March 23, 2011 2:08 PM
To: Rihm, Roger
Subject: RE: Cancel GT Support Actions

Roger,

I have:

G20110194 (Markey)
G20110189 (Blumenauer)

Please forward the interim and final responses to me for review once you have drafted them.

Thanks,

-Jim

James Biggins, Deputy Assistant General Counsel
Reactor and Materials Rulemaking
Office of the General Counsel
Mailstop O15 D21
U.S. Nuclear Regulatory Commission
(b)(6)
(301) 415-3725 fax
james.biggins@nrc.gov

From: Rihm, Roger
Sent: Wednesday, March 23, 2011 1:51 PM
To: Biggins, James
Subject: FW: Cancel GT Support Actions

From: Clayton, Kathleen
Sent: Tuesday, March 22, 2011 4:05 PM
To: RidsNrrMailCenter Resource; RidsNsirMailCenter Resource; RidsNroMailCenter Resource; RidsRgn1MailCenter Resource; RidsNmssOd Resource

000421

Cc: Rihm, Roger
Subject: FW: Cancel GT Support Actions

All,

Please note that an interim response will be sent for the Congressional correspondence tickets listed below. Roger Rihm will not be contacting your offices for input at this time. He will contact you at a future date if input is needed to complete the final response(s).

G20110184 (Kucinich) (NSIR, NRR, NMSS)
G20110181 (Lowey) (NSIR, NRR, RI)
G20110190 (Boxer/Carper) (NRR, NMSS, NSIR)
G20110175 (**Markey**) (NRR, NSIR, NRO)
G20110177 (**Markey**) (NRR, NSIR)
G20110194 (**Markey**) (NSIR)

If you have any questions, please let me know.

Kathy

From: Hiland, Patrick
To: Brown, Frederick
Subject: FW: Staffing Incident Response Teams
Date: Wednesday, March 23, 2011 3:30:00 PM
Importance: High

Fred, can you help me understand the purpose of Scott's email? I have folks who have asked if they could help, but Scott's email tells me to direct them to the RPT in the NSIR/IRD group. Would be nice if we knew who that is? Or, do we work with NRR/DIRS?

From: Morris, Scott
Sent: Wednesday, March 23, 2011 3:08 PM
To: Blount, Tom; Bergman, Thomas; Webber, Robert; Adams, John; Tschiltz, Michael; Correia, Richard; Zimmerman, Jacob; Temple, Jeffrey; Gibson, Kathy; Lubinski, John; Cool, Donald; Tappert, John; Reis, Terrence; Jones, Cynthia; Sullivan, Randy; Brandon, Lou; Grant, Jeffery; Uhle, Jennifer; Dudes, Laura; Skeen, David; Brown, Frederick; Hollan, Brian; Ruland, William; Hiland, Patrick; Case, Michael; Hasselberg, Rick
Cc: Evans, Michele; OST02 HOC; Marshall, Jane; Gott, William
Subject: Staffing Incident Response Teams
Importance: High

Staffing of each of the NRC's Incident Response Teams with capable technical staff is critical to the success of our incident response mission. However, ensuring that each of the individual team positions is filled with trained staff members is not an easy task, particularly during protracted response situations like we find ourselves now. As you know, most of the positions on the teams are filled with volunteers from around the agency.

The Executive Team Support Team (ETST) Coordinator is responsible for ensuring that a comprehensive watchbill is staffed, published, and distributed well in advance of scheduled individual duty assignments (at least three days) to ensure that there are no gaps in position coverage. The ERST Coordinator should collect individual response team watchbills from the respective Response Program Team (RPT) Managers (i.e., the permanent NSIR/IRD staff). The RPT managers are responsible for ensuring adequate staffing on each of their respective teams.

Scott A. Morris
Deputy Director for Incident Response
Division of Preparedness and Response
Office of Nuclear Security and Incident Response

U.S. Nuclear Regulatory Commission
Mail Stop T4-A43
11555 Rockville Pike
Rockville, MD 20852

scott.morris@nrc.gov
301-415-7482 (Office)
(b)(6)
301-415-5278 (Fax)

000422

Nelson, Robert

From: Nelson, Robert
Sent: Wednesday, March 23, 2011 8:11 AM
To: Shoop, Undine
Cc: Heck, Jared; Logaras, Harral; Conatser, Richard; Pederson, Cynthia; Reynolds, Steven; Barker, Allan; Westreich, Barry; Markley, Michael; Oesterle, Eric; Meighan, Sean; Nguyen, Quynh
Subject: Action: REMP Reporting Levels and Fukushima
Attachments: image001.png

See below. Can you take this for action? If so, please keep me advised of your plans to revise it.

R.A. Nelson

Robert A. Nelson
NRR External Communications Coordinator, Japan Events
Deputy Director
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation
U.S.NRC
United States Nuclear Regulatory Commission
Protecting People and the Environment
E-mail: robert.nelson@nrc.gov | Office: (301) 415-1453 | Cell (b)(6) | Fax: (301) 415-2102|

From: Barker, Allan
Sent: Tuesday, March 22, 2011 4:36 PM
To: Nelson, Robert
Cc: Heck, Jared; Logaras, Harral; Conatser, Richard; Pederson, Cynthia; Reynolds, Steven
Subject: FW: REMP Reporting Levels and Fukushima

Mr. Nelson,

My name is Allan Barker, the Region III Government Liaison Officer. I wanted to share some thoughts about the communication value that I believe exists for the agency on the regulatory environmental monitoring program that is required of licensees. The following email from Richard Conatser to regional HP branch chiefs clearly identifies a need for awareness during inspections of licensee environmental monitoring programs. In addition, I offer the following link to our public web site for the fact sheet issued in February 2002, on "Environmental Monitoring."

http://www.nrc.gov/reading-rm/doc-collections/fact-sheets/env-monitoring.html

What's missing in content for the fact sheet is two-fold. First, a perspective on the detection capability of licensee REMP sampling stations for the Fukushima event, and second, the REMP sampling stations are another defense in depth barrier to collect data to protect the health and safety of the public and the environment.

As the Region III Government Liaison Officer, I recommend that the Environmental Monitoring fact sheet be revised so we can continue to communicate a safety message in the near-term from field data that is collected and analyzed across the nation's reactor sites.

Regards,

Allan Barker

0001423

Government Liaison Officer
NRC Region III
(630) 829-9660

From: Conatser, Richard
Sent: Monday, March 21, 2011 12:18 PM
To: Werner, Greg; Henderson, Pamela; Dickson, Billy; Bonser, Brian
Cc: Garry, Steven; Pedersen, Roger; Jimenez, Manuel; Clemons-Webb, Candace; Shoop, Undine
Subject: REMP Reporting Levels and Fukushima

All,

You may want to pass this along to your Inspectors who will be on inspections during the next couple of months.

The NRC's REMP REPORTING LEVELs may be exceeded as a result of plumes from Fukushima passing over REMP sampling stations. This email contains some unit conversions for your use. The table below shows the default NRC REPORTING LEVEL for I-131 in REMP samples listed in NUREG-1301 (PWRs) and NUREG-1302 (BWRs). It also converts the REPORTING LEVELS to those units commonly used at the plant sites.

I-131 Reporting Level in NUREG 1301 and NUREG-1302

	I-131	Units	I-131	Units
Drinking Water	2	pCi/L	2E-09	uCi/ml
Non-Drinking Water	20	pCi/L	2E-08	uCi/ml
Air	0.9	pCi/m3	9E-13	uCi/cc

These are default values, and the site-specific values will be in the licensees' ODCMs. The REMP REPORTING LEVELs may be exceeded as a result of plumes from Fukushima passing over REMP sampling stations. The REMP results may vary as various puffs/plumes traverse the US. If a nuclide concentration exceeds the REPORTING LEVES (averaged over a calendar quarter), the licensee may be required to report the data to the NRC within 30 days. The licensee should take the actions listed in their ODCM.

Because the I-131 (and possibly other radionuclides) from Fukushima will elevate the "background," it will reduce the licensee's ability to differentiate releases from their site. Strong data evaluation and analyses are appropriate at all times, and are particularly applicable at this time. This is also a good verification of licensee's analytical detection capabilities.

Best Regards,

Richard L. Conatser
Health Physicist
Nuclear Regulatory Commission
301-415-4039
Richard.Conatser@NRC.gov

Nelson, Robert

From: Nelson, Robert
Sent: Wednesday, March 23, 2011 9:06 AM
To: Reynolds, Steven
Cc: Burnell, Scott
Subject: RE: Licensee Confirmed I-131....

Please keep me informed. I pass this info along to OPA so they be prepared for inquiries, should they occur.

NELSON

From: Reynolds, Stever
Sent: Wednesday, March 23, 2011 9:02 AM
To: Nelson, Robert
Subject: Licensee Confirmed I-131....

Bob,

Let me know if you want updates for RIII sites.

Thanks,
Steve

From: Krsek, Robert
To: Cassidy, John
Cc: Barclay, Kevin; Kunowski, Michael; Jandovitz, John
Sent: Tue Mar 22 18:02:13 2011
Subject: Licensee Confirmed I-131....

So, the RP/Chem Manager stopped by. They have confirmed the rainwater is I-131, they hit 25+ peaks on the spectrum.

They also had a chemistry technician grab water samples from his home rain barrel at lunch and it had the same I-131 spectrum.

The licensee will continue to monitor and sample rain water so that they can establish adequate background readings for the site.

If you would like, I can keep updating you if and when they start finding other isotopes...

Thanks,

Robert G. Krsek
Senior Resident Inspector
Kewaunee Power Station
Office: 920.388.3156
Cell: (b)(6)

0001424

Nelson, Robert

From: Nelson, Robert
Sent: Wednesday, March 23, 2011 8:27 AM
To: Quay, Theodore; Regan, Christopher
Cc: McGinty, Tim; Blount, Tom; Astwood, Heather
Subject: RE: seeking NRC comment on IEA report raising conerns about safety upgrades at US nuclear plants.

Importance: High

Heather Astwood was working this and had prepared a draft response, I believe

NELSON

From: Quay, Theodore
Sent: Wednesday, March 23, 2011 4:49 AM
To: Regan, Christopher
Cc: McGinty, Tim; Blount, Tom; Nelson, Robert
Subject: FW: seeking NRC comment on IEA report raising conerns about safety upgrades at US nuclear plants.

Please note the e-mail to Scott Burnell from Tom Doggett (Reuters News Agency). Can we get an answer for this?

From: Nelson, Robert
Sent: Tuesday, March 22, 2011 3:35 PM
To: Burnell, Scott
Cc: Cullingford, Michael; Astwood, Heather; McGinty, Tim; Blount, Tom; Quay, Theodore
Subject: RE: seeking NRC comment on IEA report raising conerns about safety upgrades at US nuclear plants.

DORL has no one available who is familiar with the IAEA IRRS Report. Our international team in DPR is probably the best source for support.

NELSON

From: Burnell, Scott
Sent: Tuesday, March 22, 2011 3:22 PM
To: Cullingford, Michael; Astwood, Heather; Nelson, Robert
Subject: FW: seeking NRC comment on IEA report raising conerns about safety upgrades at US nuclear plants.
Importance: High

Bob;

Jon Hopkins is out and he's the go-to on the IRRS report. As you saw, I tried to wave the reporter off but I need our response ASAP!! Thanks.

Scott

From: tom.doggett@thomsonreuters.com [mailto:tom.doggett@thomsonreuters.com]
Sent: Tuesday, March 22, 2011 3:17 PM
To: Burnell, Scott
Subject: seeking NRC comment on IEA report raising conerns about safety upgrades at US nuclear plants.

000 1425

Hey Scott,

I writing a story on the IAEA report released two days before the Japan earthquake comparing U.S. nuclear power regulation to other countries. The NRC's overall regulatory structure got the IAEA's blessing. However, the agency raised concerns about the safety upgrades at some older U.S. reactors. The group said some plant operator make the upgrades on their own, while others waited to be told or do the minimum to meet NRC regulations. The IAEA said the NRC should direct plant operators that they have to take their own initiatives to improve safety and the NRC should take measures to ensure licensees are more proactive in upgrading their systems.. That's what my story is about. What is the NRC's comment on this part of the report, which can be found on page. 69. Thanks--Tom

Tom Doggett
Energy Correspondent
Reuters News Agency
202-898-8320 (work)
(b)(6) (cell)

Nelson, Robert

From: Nelson, Robert
Sent: Tuesday, March 22, 2011 4:25 PM
To: Burnell, Scott
Subject: RE: seeking NRC comment on IEA report raising conerns about safety upgrades at US nuclear plants.

OK, thanks.

NELSON

From: Burnell, Scott
Sent: Tuesday, March 22, 2011 4:24 PM
To: Nelson, Robert
Subject: RE: seeking NRC comment on IEA report raising conerns about safety upgrades at US nuclear plants.

We learn as we go – I ended up trying to meet the organization's deadline with a general "our authority has limits" response, the sort of thing we said in discussions with the IRRS team.

From: Nelson, Robert
Sent: Tuesday, March 22, 2011 4:08 PM
To: Burnell, Scott
Subject: RE: seeking NRC comment on IEA report raising conerns about safety upgrades at US nuclear plants.

Your impression is correct. I should have handled this differently

NELSON

From: Burnell, Scott
Sent: Tuesday, March 22, 2011 3:49 PM
To: Nelson, Robert
Subject: RE: seeking NRC comment on IEA report raising conerns about safety upgrades at US nuclear plants.

OK, I was working under the impression you were coordinating all NRR external communications.

From: Nelson, Robert
Sent: Tuesday, March 22, 2011 3:35 PM
To: Burnell, Scott
Cc: Cullingford, Michael; Astwood, Heather; McGinty, Tim; Blount, Tom; Quay, Theodore
Subject: RE: seeking NRC comment on IEA report raising conerns about safety upgrades at US nuclear plants.

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Scott

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Tom Doggett
Energy Correspondent
Reuters News Agency
202-898-8320 (work)
(b)(6)

Rivera-Lugo, Richard

From: (b)(6)
Sent: Wednesday, March 23, 2011 6:26 AM
To: Rivera-Lugo, Richard; Kammerer, Annie; Ake, Jon
Cc: Roche, Robert
Subject: Re: Japan Earthquake Ground Motions

Categories: Green Category

Richard ... I just had a chance to look at the attachment ... it, potentially, has a lot of value - some questions are: from what location(s) are these records? the multiple curves plotted in later slides - are these multiple locations? one location multiple events? what exactly are these? I assume one location for multiple events but maybe not ... what are cyclic spectra? sounds interesting ... thanks for including me ... with best regards ... JJJ

-----Original Message-----
From: Rivera-Lugo, Richard <Richard.Rivera-Lugo@nrc.gov>
To: Kammerer, Annie <Annie.Kammerer@nrc.gov>; Ake, Jon <Jon.Ake@nrc.gov> (b)(6)
Cc: Roche, Robert <Robert.Roche@nrc.gov>
Sent: Tue, Mar 22, 2011 9:50 am
Subject: FW: Japan Earthquake Ground Motions

Annie, Jon and Jim,

I suppose that you probably have this information already, but nevertheless I wanted to share this e-mail that was sent by Praveen Malhotra, from Strong Motions, Inc. with information on the ground motions recorded during the Japan EQ from March 11th. Praveen is the instructor of some of the continuing education seminars offered by ASCE; he always keeps in touch with people who have taken his seminars.

Hopefully, this information will be of some use to you.

Best regards,
Richie

Richard Rivera-Lugo, EIT, MEM
Technical Assistant (Acting)
U.S. Nuclear Regulatory Commission – HQ
RES/DE
Ph. 301-251-7652
Fax 301-251-7420
Mail M.S. C5C07M
E-mail Richard.Rivera-Lugo@nrc.gov

From: Praveen Malhotra (StrongMotions Inc.) [mailto:praveen.malhotra@strongmotions.com]
Sent: Tuesday, March 22, 2011 7:07 AM
To: praveen.malhotra@strongmotions.com
Subject: Japan Earthquake Ground Motions

Hello Everyone,

I thought of sharing with you some information regarding ground motions from magnitude Mw 9 Tohoku Japan Earthquake.

0001426

Attached PDF shows response spectra from 25 strongly shaken sites in Japan. All response spectra are for 5% of critical damping.

Speaker notes can be viewed by placing the cursor on the top left corner of each slide.

Note the following:

Very high accelerations at some stations, as would be expected since ground motions are highly random and some sites are bound to see very strong shaking during an earthquake.
Significant de-amplification of high-frequencies at depth.
Large deformations as would be expected from an earthquake of this size.
Very large number of response cycles which again is expected from a magnitude Mw 9 Earthquake.

Feel free to ask any questions or provide feedback.

Regards,

Praveen

Dr. Praveen K. Malhotra, P.E.
StrongMotions Inc.
www.StrongMotions.com
781-363-3003

=

Nelson, Robert

From: Nelson, Robert
Sent: Wednesday, March 23, 2011 11:19 AM
To: McIntyre, David
Subject: RE: Paper from 2003 calling for NRC to stop allowing reracking, calling for 5 years from pool to cask
Attachments: Japanese Event Response and Available Resources

Dave:

See the second paragraph of the attached e-mail from Eric Leeds regarding my role. I don't know how this role will evolve.

I would appreciate that you either route thru me or cc me on any queries to NRR staff in response to the Japan events.

NELSON

From: McIntyre, David
Sent: Wednesday, March 23, 2011 10:59 AM
To: Jones, Steve
Cc: Nelson, Robert
Subject: RE: Paper from 2003 calling for NRC to stop allowing reracking, calling for 5 years from pool to cask

Steve – by the way, as part of what we here in OPA are calling "the new normal," we are expecting this pool issue to bedevil us for awhile. At some point I'd like to stop by your office, shake your hand and thank you for your help, and then ask you to teach me everything you know. (Well, maybe not everything.)

Bob – does your designation as Communications Lead for Japan extend into the lessons-learned stage and responses to public/media inquiries? If so, we'll get to know each other even better than during your stint in NMSS.

Dave

From: Jones, Steve
Sent: Wednesday, March 23, 2011 10:36 AM
To: McIntyre, David
Cc: Nelson, Robert
Subject: RE: Paper from 2003 calling for NRC to stop allowing reracking, calling for 5 years from pool to cask

Dave,

The attached files are the only 2.206 petition and director's decisions I know of related to the 2003 Alvarez paper. They are publically available at the accession number included in the file name. Basically, the staff was looking at SFP issues already, and the staff determined the actions the NRC had taken by 2005 reasonably addressed the petition. The director's decision references other publically available documents, such as letters to Congress and the National Academy of Sciences report on spent fuel pool safety (public summary attached).

By the way, please keep Bob Nelson, the NRR Communications Lead for Japan, in the loop.

Thanks!

000|427

Steve

Steven R. Jones
Sr. Reactor Systems Engineer
NRR/DSS/SBPB
301-415-2712

From: McIntyre, David
Sent: Wednesday, March 23, 2011 9:17 AM
To: Jones, Steve
Subject: FW: Paper from 2003 calling for NRC to stop allowing reracking, calling for 5 years from pool to cask

Steve – are you familiar with the attached paper and whatever became of it?

Thanks,
Dave

From: Mitlyng, Viktoria
Sent: Tuesday, March 22, 2011 6:53 PM
To: McIntyre, David
Subject: FW: Paper from 2003 calling for NRC to stop allowing reracking, calling for 5 years from pool to cask

Dave,

Can you give me a contact for finding out if the attached report on spent fuel pool safety was submitted to the NRC as a 2.206 petition in 2003? Or, at least, tell me where to start. It's for the same Minneapolis Star Tribune Inquiry. The reporter is digging pretty deep on spent fuel pools and getting an ear full from the authors of this report. Now, he wants to understand the NRC's perspective and position relative to their statements. His deadline is Wednesday and I am hoping to get on this early AM. Thank you. Can't promise a good bottle of wine since you have them all... You'll have to do with a hug next time I see you.

Vika

From: Shaffer, David [mailto:David.Shaffer@startribune.com]
Sent: Tuesday, March 22, 2011 4:13 PM
To: Mitlyng, Viktoria
Subject: Paper from 2003 calling for NRC to stop allowing reracking, calling for 5 years from pool to cask

Victoria,

Here is the 2003 paper. The authors said NRC never formally responded.

David Shaffer
Reporter/Editor, Business news
Minneapolis Star Tribune
612-673-7090 (desk) (b)(6) (cell)

Weaver, Tonna

From: Morris, Scott
Sent: Wednesday, March 23, 2011 3:08 PM
To: Blount, Tom; Bergman, Thomas; Webber, Robert; Adams, John; Tschiltz, Michael; Correia, Richard; Zimmerman, Jacob; Temple, Jeffrey; Gibson, Kathy; Lubinski, John; Cool, Donald; Tappert, John; Reis, Terrence; Jones, Cynthia; Sullivan, Randy; Brandon, Lou; Grant, Jeffery; Uhle, Jennifer; Dudes, Laura; Skeen, David; Brown, Frederick; Holian, Brian; Ruland, William; Hiland, Patrick; Case, Michael; Hasselberg, Rick
Cc: Evans, Michele; OST02 HOC; Marshall, Jane; Gott, William
Subject: Staffing Incident Response Teams

Importance: High

Staffing of each of the NRC's Incident Response Teams with capable technical staff is critical to the success of our incident response mission. However, ensuring that each of the individual team positions is filled with trained staff members is not an easy task, particularly during protracted response situations like we find ourselves now. As you know, most of the positions on the teams are filled with volunteers from around the agency.

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Deputy Director for Incident Response
Division of Preparedness and Response
Office of Nuclear Security and Incident Response

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Rockville, MD 20852

scott.morris@nrc.gov
301-415-7482 (Office)
(b)(6)
301-415-5278 (Fax)

000/428

Thadani, Mohan

From: Thadani, Mohan
Sent: Wednesday, March 23, 2011 1:01 PM
To: Collins, Timothy; Burnell, Scott
Cc: Nelson, Robert
Subject: RE: Vent paths

Tim:

Tim:

That is correct. That is why we said that venting through a path that would significantly reduce the fission product release to the environment should be adopted.

Mohan

From: Collins, Timothy
Sent: Wednesday, March 23, 2011 10:21 AM
To: Burnell, Scott; Thadani, Mohan
Cc: Nelson, Robert
Subject: RE: Vent paths

Mohan,

This is my understanding:

The second (less desirable) path takes suction off the drywell airspace (as opposed to the suppression pool airspace). The suppression pool airspace suction path is preferable because it provides for a fission product scrubbing of the discharge through the suppression pool prior to the release. There is no scrubbing of the release if the drywell airspace suction path is used.

Can you confirm?

Tim C

From: Burnell, Scott
Sent: Wednesday, March 23, 2011 9:32 AM
To: Thadani, Mohan; Collins, Timothy
Cc: Nelson, Robert
Subject: FW: Vent paths

Mohan, Tim;

The Mark I hits just keep on a-coming... Not a lot of detail needed here, I think. Thanks.

Scott

From: Xie, Yanmei [mailto:yanmei_xie@platts.com]
Sent: Tuesday, March 22, 2011 3:24 PM
To: Burnell, Scott
Subject: Vent paths

000|429

Hi, Scott,

Sorry for my steam of questions. During yesterday's briefing, Mr. Borchardt provided the following answer to one of the questions. He said there are two vents paths off of US Mark I containments, but he only mentioned one. Would you be able to find out what the other path is? Thank you!

MR. BORCHARDT: There's two vent paths off of the U.S. Mark I containments. The preferred vent path takes suction, if you will, or has a release path from the airspace above a pool of water that's in the basement, it's in the torus of the Mark I containment, and that would allow for the steam that went into the torus to be scrubbed of fission products, so you would have a release; it would relieve the pressure, which is the main objective of the vent, is, you want to maintain the containment integrity. And it's preferable to vent it on purpose to get the pressure so that you don't have a catastrophic failure of the containment. So it's at least my belief that you wouldn't have the hydrogen accumulation in the upper levels of the reactor building, which we believe is the cause of the explosions. Now, the spent fuel pools on these designs are also on that same level, on the upper level of the reactor building. So it's, the hardened vent wouldn't do anything to help hydrogen that came from the spent fuel pool

Yanmei Xie

Associate Editor

Platts Nuclear Publications

Office: (202) 383-2161

Mobile: (b)(6)

www.platts.com

Nelson, Robert

From: Nelson, Robert
Sent: Wednesday, March 23, 2011 11:24 AM
To: McIntyre, David
Subject: RE: Paper from 2003 calling for NRC to stop allowing reracking, calling for 5 years from pool to cask

OBTW, Eliot was on distribution for the original e-mail that Eric sent describing my role.

NELSON

From: McIntyre, David
Sent: Wednesday, March 23, 2011 11:22 AM
To: Nelson, Robert
Cc: Burnell, Scott
Subject: RE: Paper from 2003 calling for NRC to stop allowing reracking, calling for 5 years from pool to cask

Well, he didn't tell me! Harrrrumph! Just because people always mistake us for each other doesn't mean we can read each other's minds ... ☹

From: Nelson, Robert
Sent: Wednesday, March 23, 2011 11:21 AM
To: McIntyre, David
Subject: RE: Paper from 2003 calling for NRC to stop allowing reracking, calling for 5 years from pool to cask

Burnell is aware.

NELSON

From: McIntyre, David
Sent: Wednesday, March 23, 2011 11:20 AM
To: Nelson, Robert
Subject: RE: Paper from 2003 calling for NRC to stop allowing reracking, calling for 5 years from pool to cask

Will do, and will alert the others here in OPA.

From: Nelson, Robert
Sent: Wednesday, March 23, 2011 11:19 AM
To: McIntyre, David
Subject: RE: Paper from 2003 calling for NRC to stop allowing reracking, calling for 5 years from pool to cask

Dave:

See the second paragraph of the attached e-mail from Eric Leeds regarding my role. I don't know how this role will evolve.

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NELSON

000|430

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Sent: Wednesday, March 23, 2011 10:59 AM
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Cc: Nelson, Robert
Subject: RE: Paper from 2003 calling for NRC to stop allowing reracking, calling for 5 years from pool to cask

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Vika

From: Shaffer, David [mailto:David.Shaffer@startribune.com]
Sent: Tuesday, March 22, 2011 4:13 PM
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Subject: Paper from 2003 calling for NRC to stop allowing reracking, calling for 5 years from pool to cask

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Reporter/Editor, Business news
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Nelson, Robert

From: Nelson, Robert
Sent: Wednesday, March 23, 2011 1:26 PM
To: Burnell, Scott
Cc: Markley, Michael; Oesterle, Eric; Chernoff, Harold; Collins, Timothy
Subject: RE: Vent paths

Basic Answer

The other vent pathway in the Mark I design is from the drywell (inverted light bulb shaped) portion of the primary containment.

Additional Information

This permits venting of primary containment is circumstances where the wetwell (torus/suppression pool) has become filled with water.

NELSON

From: Nelson, Robert
Sent: Wednesday, March 23, 2011 9:35 AM
To: Markley, Michael; Oesterle, Eric; Chernoff, Harold
Subject: FYI: Vent paths

NELSON

From: Burnell, Scott
Sent: Wednesday, March 23, 2011 9:32 AM
To: Thadani, Mohan; Collins, Timothy
Cc: Nelson, Robert
Subject: FW: Vent paths

Mohan, Tim;

The Mark I hits just keep on a-coming... Not a lot of detail needed here, I think. Thanks.

Scott

From: Xie, Yanmei [mailto:yanmei_xie@platts.com]
Sent: Tuesday, March 22, 2011 3:24 PM
To: Burnell, Scott
Subject: Vent paths

Hi, Scott,

Sorry for my steam of questions. During yesterday's briefing, Mr. Borchardt provided the following answer to one of the questions. He said there are two vents paths off of US Mark I containments, but he only mentioned one. Would you be able to find out what the other path is? Thank you!

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MR. BORCHARDT: There's two vent paths off of the U.S. Mark I containments. The preferred vent path takes suction, if you will, or has a release path from the airspace above a pool of water that's in the basement, it's in the torus of the Mark I containment, and that would allow for the steam that went into the torus to be scrubbed of fission products, so you would have a release; it would relieve the pressure, which is the main objective of the vent, is, you want to maintain the containment integrity. And it's preferable to vent it on purpose to get the pressure so that you don't have a catastrophic failure of the containment. So it's at least my belief that you wouldn't have the hydrogen accumulation in the upper levels of the reactor building, which we believe is the cause of the explosions. Now, the spent fuel pools on these designs are also on that same level, on the upper level of the reactor building. So it's, the hardened vent wouldn't do anything to help hydrogen that came from the spent fuel pool

Yanmei Xie

Associate Editor

Platts Nuclear Publications

Office: (202) 383-2161

Mobile: (b)(6)

www.platts.com

Nelson, Robert

From: Nelson, Robert
Sent: Wednesday, March 23, 2011 1:23 PM
To: Howe, Allen; Giitter, Joseph
Subject: RE: Urgent: please respond regarding RST director

I'll be here. I'd like to (b)(6)

NELSON

From: Howe, Allen
Sent: Wednesday, March 23, 2011 11:52 AM
To: Nelson, Robert; Giitter, Joseph
Subject: RE: Urgent: please respond regarding RST director

Do you see any conflicts/challenges if I sign up for 4/4 - 4/7?

Thanks - Allen

From: Gray, Kathy
Sent: Wednesday, March 23, 2011 10:52 AM
To: Howe, Allen
Cc: Thorp, John; Thomas, Eric
Subject: FW: Urgent: please respond regarding RST director

Allen,

I understand you are interested as serving as an RST Director in the Ops Center. Currently, I have the following shifts that need coverage:

3/30 - 7am - 3pm
4/1 - 7am - 3pm
4/2 - 3pm - 11pm
4/4 - 3pm - 11pm
4/5 - 3pm - 11pm
4/7 - 3pm - 11pm

If you are available to cover any of these shifts, please let me know.

Prior to shift, since I believe this will be your first time as an RST Director, it has been recommended by Rick Hasselberg (Ops Center), that you spend time with an RST Director so that you can get the proper situational awareness, etc to be up to speed on the RST Director responsibilities.

For your info, below are the current schedules, subject to change. I am awaiting confirmation on the 3/26-4/2 11pm-7am shift change .. I believe Mike Case and Dave Skeen are swapping due to schedule conflicts.

Shift	3/18 (Fri)	3/19 (Sat)	3/20 (Sun)	3/21 (Mon)	3/22 (Tues)	3/23 (Wed)	3/24 (Thur)	3/25 (Fri)

000432

7am–3pm	(Laura Dudes)	Laura Dudes	Laura Dudes	Fred Brown	Fred Brown	Fred Brown	Fred Brown	Pat Hiland
3pm–11pm	(Bill Ruland)	Dave Skeen	Dave Skeen	Dave Skeen	Dave Skeen	Bill Ruland	Bill Ruland	Bill Ruland
11pm–7am	Jennifer Uhle	Jennifer Uhle	Jennifer Uhle	Jennifer Uhle	Brian Holian	Brian Holian	Brian Holian	Brian Holian

Shift	**3/26 (Sat)**	**3/27 (Sun)**	**3/28 (Mon)**	**3/29 (Tues)**	**3/30 (Wed)**	**3/31 (Thur)**	**4/1 (Fri)**	**4/2 (Sat)**
7am–3pm	Pat Hiland	Pat Hiland	Pat Hiland	Ed Hackett		Ed Hackett		Brian Holian
3pm–11pm	Bill Ruland	Fred Brown	Fred Brown	Fred Brown	Fred Brown	Bill Ruland	Bill Ruland	~~Bill Ruland~~ (NEED REPLACEMENT)
11pm–7am	Mike Case	Mike Case	Mike Case	Mike Case	~~Dave Skeen~~	~~Dave Skeen~~	~~Dave Skeen~~	~~Dave Skeen~~

April 3 – April 10, 2011

Shift	**4/3 (Sun)**	**4/4 (Mon)**	**4/5 (Tues)**	**4/6 (Wed)**	**4/7 (Thur)**	**4/8 (Fri)**	**4/9 (Sat)**	**4/10 (Sun)**
7am–3pm	Brian Holian	Brian Holian	Brian Holian	Mike Case	Mike Case	Mike Case	Mike Case	~~Dave Skeen~~
3pm–11pm	Bill Ruland			Ed Hackett		Pat Hiland	Pat Hiland	Pat Hiland
11pm–7am	Laura Dudes	Laura Dudes	Laura Dudes	Laura Dudes	Fred Brown	Fred Brown	Fred Brown	Fred Brown

If you should have any questions, please let me know.

Thanks,

Kathy A. Gray

Information Management Asst.
Operating Experience Branch, DIRS/NRR
301-415-1166, Rm. O-7F04
Kathy.Gray@nrc.gov

-----Original Message-----
From: Evans, Michele
Sent: Wednesday, March 23, 2011 8:30 AM
To: Gray, Kathy; Thorp, John
Subject: FW: Urgent: please respond regarding RST director

Kathy,

Here is the best I could do to back fill for Jennifer Uhle as RST director. See Ed's dates below.

I was told by Fred Brown that Allen Howe was interested in RST director position. Please take it from here and contact Allen and others to backfill for Jennifer .

Obviously, we won't be able to keep to our 4 days in a row original thought process, but that is ok.

Please confirm with me once you've filled the vacant slots.

Thanks so much.

Michele

-----Original Message---
From: Hackett, Edwin
Sent: Tuesday, March 22, 2011 8:09 PM
To: Evans, Michele
Subject: RE: Urgent: please respond regarding RST director

Hi Michele,

Sorry to be late in responding. I was out of the office today and I've just gotten back to emails.

Unfortunately, I can't do all of these slots due to prior commitments.

I can do:

3/29 - 7-3;
3/31 - 7-3;
4/6 - 3-11;

Hope this will help.

Also, I have never actually been an RST director - do I need training?

Thanks,

Ed

From: Evans, Michele
Sent: Tuesday, March 22, 2011 12:23 PM
To: Hackett, Edwin
Cc: Gray, Kathy
Subject: Urgent: please respond regarding RST director

Ed,

Jim indicated that you were interested in taking spot in Ops Center.

Jennifer Uhle is being moved from RST director to the ET spot. I'd like to just insert you into Jennifer's vacant RST Director slots as follows:

3/29, 7 – 3
3/30, 7-3
3/31, 7-3
4/1, 7-3

4/4, 3-11
4/5, 3-11
4/6, 3-11
4/7, 3-11

Please confirm as soon as you can if you can do this.

Thanks

Michele

Nelson, Robert

From: Nelson, Robert
Sent: Wednesday, March 23, 2011 9:45 AM
To: Mathew, Roy
Cc: Hiland, Patrick; Wilson, George; Skeen, David; Thomas, Eric; Markley, Michael
Subject: Response: Electrical System Design for Japanese Plants
Attachments: partial electrical status.pdf; image001.png

I tried

NELSON

From: LIA06 Hoc
Sent: Wednesday, March 23, 2011 9:42 AM
To: Nelson, Robert
Subject: RE: Query: Electrical System Design for Japanese Plants

Bob... this is what I was able to find from the RST.. Right now there is a reluctance with sending a tasker to the team to get this information..based in part on the APRIL 28TH meeting date.

Hope this is somewhat helpful.

Mike Tschiltz
Liaison Team Director
U.S. Nuclear Regulatory Commission
Operations Center

From: Nelson, Robert
Sent: Wednesday, March 23, 2011 9:14 AM
To: LIA06 Hoc
Cc: Hiland, Patrick; Wilson, George; Skeen, David; Thomas, Eric; Mathew, Roy
Subject: Query: Electrical System Design for Japanese Plants

Can you assist in this matter? Please respond directly to Roy Mathew, with me on cc.

R. A. Nelson

Robert A. Nelson
NRR External Communications Coordinator, Japan Events
Deputy Director
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

U.S.NRC
United States Nuclear Regulatory Commission
Protecting People and the Environment

E-mail: robert.nelson@nrc.gov | Office: (301) 415-1453 | Cell: (b)(6) | Fax: (301) 415-2102|

From: Mathew, Roy
Sent: Wednesday, March 23, 2011 9:10 AM
To: Nelson, Robert

000433

Cc: Hiland, Patrick; Wilson, George; Skeen, David; Thomas, Eric
Subject: Electrical System Design for Japanese Plants

EEEB is preparing for a Commission meeting in April 28, 2011, to discuss the status of Japanese event and to provide an overview of the SBO rule.

Presently, we do not have any insights on the Japanese electrical power system design. If possible, we would like to get the following information through the NRC team in Japan.

1. How many offsite power circuits are provided to the safety buses? Are they independent and redundant and have sufficient capacity and capability to support cold shutdown capability for all postulated events at the plant?. How many of these sources are immediately available after a unit trip?. Are the offsite circuits shared with adjacent units?

2. How many loss of offsite power events have occurred in the last 20 years at each plant? What is the duration of loss of offsite power? How many loss of power events to one safety bus have occurred at the plant? In the last 20 years, has there been a station blackout event at any plants?

3. How many standby power sources (diesel generators or other power sources) are provided for each unit? How many are required as a minimum to support safe shutdown of the unit? What is the reliability of the standby power source?

4. Are standby power systems including the support systems (fuel oil, cooling water, switchgear, control power, raceways, cables etc.) protected from natural phenomena such as tsunami, flood, and earthquakes?

5. Are AC and DC power sources shared between units at a site?

6. DC System (Class 1E)

   - How many battery systems are provided per unit?
   - Are they redundant and independent?
   - What are the duty cycle (s) ? Provide manufacturer name and the types of batteries used (e.g., lead acid)
   - How often is the battery capacity test performed?
   - What is the amp-hour and nominal voltage rating of the batteries?
   - Is there load shedding required if the DC system has to be used for loss of all AC events? If yes, what percentage of the loads are shed?

7. Are there any regulatory requirements to withstand and recover from a station blackout event? (loss of all offsite and onsite Class 1E AC power sources with turbine trip).
8.
9. If there are requirements, Is AC independent system used (DC) or Alternate AC power source used for coping with station blackout? Are these power sources protected from natural phenomena such as tsunami, flood, and earthquakes? Is there any specific analysis required by the licensees and do they have to update the analysis if assumptions change? What are the typical coping time(s)? How is the coping duration determined? Are there plant procedures and operator training provided for a station blackout scenario? Is station blackout assumed to occur in more than one unit at a multi-unit site?

Nelson, Robert

From: Nelson, Robert
Sent: Wednesday, March 23, 2011 3:23 PM
To: McIntyre, David
Cc: Burnell, Scott; Mitlyng, Viktoria; Bowman, Eric; Jones, Steve; Markley, Michael
Subject: RE: OPA Request on SFPs

As you can see, I'm already 3 hours behind in responding to this e-mail.

Not sure what you mean by quick. My Division has no one who is an expert or even close on spent fuel pools. Thus we need to rely on other office resources. I can't commit for other divisions. If you need an answer today, that is unlikely.

My sense is that nothing has changed regarding our policy. I worked in the Div of Spent Fuel Storage and Transportation in NMSS until 2008. SFST is responsible for licensing dry storage. At that time, there was no change in policy that would accelerate movement of SNF from wet to dry storage.

I will engage with other NRR divisions to prepare some talking points.

NELSON

From: McIntyre, David
Sent: Wednesday, March 23, 2011 12:07 PM
To: Nelson, Robert
Cc: Burnell, Scott; Mitlyng, Viktoria; Bowman, Eric; Jones, Steve; Brenner, Eliot
Subject: OPA Request on SFPs

Bob – One thing we're getting inundated with is questions regarding the 2004 report by the National Academies on Safety of Spent Fuel Storage, specifically their recommendation that we require plants to move SNF to cask after 5 years in pool. They want to know what changes we have directed, implemented, etc. in response to that report. Also, they are pointing out that in 2008 then Commissioner Jaczko publicly advocated regulations requiring transfer to cask after 5 yrs in pool. Has there been any movement on this?

I'm aware that at the time, Chm Diaz wrote to Sen Domenici with some detailed responses, including our position that SNF is safe in pool or cask, so we saw no reason to require early transfer; also that this position has not changed. On Sunday, Eric Bowman helped me reply to a couple questions from AP regarding some other NAS recommendations, specifically the arrangement of assemblies in the pools and one other that escapes me at the moment.

Would it be possible for your new Communications Rapid Response Team to draw up some quick talking points we could use on the current status of these issues? Relying on Diaz' letter is tenuous since it's six years old. His letter is online here: http://www.nrc.gov/reading-rm/doc-collections/congress-docs/correspondence/2005/domenici-03142005.pdf

Thanks,
Dave

David McIntyre
Public Affairs Officer
U.S. Nuclear Regulatory Commission

000|434

(301) 415-8206 (direct)
(b)(6)
Protecting People & the Environment

Nelson, Robert

From: Nelson, Robert
Sent: Wednesday, March 23, 2011 3:14 PM
To: Markley, Michael
Subject: Action: OPA Request on SFPs

See me on this before taking any action.

NELSON

From: McIntyre, David
Sent: Wednesday, March 23, 2011 12:07 PM
To: Nelson, Robert
Cc: Burnell, Scott; Mitlyng, Viktoria; Bowman, Eric; Jones, Steve; Brenner, Eliot
Subject: OPA Request on SFPs

Bob – One thing we're getting inundated with is questions regarding the 2004 report by the National Academies on Safety of Spent Fuel Storage, specifically their recommendation that we require plants to move SNF to cask after 5 years in pool. They want to know what changes we have directed, implemented, etc. in response to that report. Also, they are pointing out that in 2008 then Commissioner Jaczko publicly advocated regulations requiring transfer to cask after 5 yrs in pool. Has there been any movement on this?

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Would it be possible for your new Communications Rapid Response Team to draw up some quick talking points we could use on the current status of these issues? Relying on Diaz' letter is tenuous since it's six years old. His letter is online here: http://www.nrc.gov/reading-rm/doc-collections/congress-docs/correspondence/2005/domenici-03142005.pdf

Thanks,
Dave

David McIntyre
Public Affairs Officer
U.S. Nuclear Regulatory Commission
(301) 415-8206 (direct)
(b)(6)
Protecting People & the Environment

Hoxie, Chris

From: Hoxie, Chris
Sent: Wednesday, March 23, 2011 5:30 PM
To: Ramirez, Annie
Subject: RE: ACTION: FOIA Request on Japan Events (Due date Wednesday 3/30)

Hi Annie,
I personally have not been involved in the Japan event. I will check with my staff...

Chris L. Hoxie, PhD
Branch Chief, Code Development
Division of Systems Analysis
Office of Nuclear Regulatory Research
United States Nuclear Regulatory Commission
Room: CH3-D04
Phone: 301-251-7562
Cell: (b)(6)

From: Ramirez, Annie
Sent: Wednesday, March 23, 2011 3:44 PM
To: RES_DSA
Cc: Gibson, Kathy; Elkins, Scott; Armstrong, Kenneth
Subject: ACTION: FOIA Request on Japan Events (Due date Wednesday 3/30)
Importance: High

DSA Staff,

We have been tasked with a FOIA Request from the Associated Press (AP) regarding internal communications within the NRC pertaining to the Japanese nuclear incidents at the Fukushima Dai-ichi, Fukushima Daini, and Onagawa power plants, consequence of the earthquake and tsunami events on March 11, 2011.

- **Please provide ALL documentation** (*emails, attachments to e-mails, faxes, memos, letters and all other types of written communication*) characterize as internal communication (NRC Staff to NRC staff only) pertaining to the Japanese event during the period of **March 11, 2011** when the event occurred to **March 16, 2011**, when the request was issued.

- If, for any reason, you think that documentation should not be released to the requester (e.g. official use only material proprietary information, etc.), you must still provide it but, note on the documentation your justifications for recommending the information remain internal (please also discuss this with your manager). The FOIA Office will determine what will be released considering the staff's recommendations. (See the attached guidance)

- **Please provide hard copies of any records that meet the above criteria to Jazel Parks by COB on Wednesday, March 30th.**

Attached is the "*How to Respond to a FOIA Request*" document for more detailed guidance please, refer to steps 6 & 7 for further guidance. If you have any questions please contact me or Jazel Parks, and we will do our best to address your concerns.

000 1435

Please let me know if you have any questions, comments, or concerns related to this request.

Annie

Annie Ramirez, EIT
U. S. Nuclear Regulatory Commission
Technical Assistant (Acting)
Email: annie.ramirez@nrc.gov
Phone: (301)-251-7537
Office: CSB-3C10
RES/DSA/RSAB

Hoxie, Chris

From: Hoxie, Chris
Sent: Wednesday, March 23, 2011 5:51 PM
To: Wagner, Katie; Lee, Richard
Subject: FW: Assistance Needed in Estimating Salt Buildup and Internals Blockage for Japanese BWR/4

fyi

Chris L. Hoxie, PhD
Branch Chief, Code Development
Division of Systems Analysis
Office of Nuclear Regulatory Research
United States Nuclear Regulatory Commission
Room: CH3-D04
Phone: 301-251-7562
Cell: (b)(6)

From: Staudenmeier, Joseph
Sent: Wednesday, March 23, 2011 5:13 PM
To: Gilmer, James
Cc: Uhle, Jennifer; Hoxie, Chris; Donoghue, Joseph
Subject: RE: Assistance Needed in Estimating Salt Buildup and Internals Blockage for Japanese BWR/4

Jim,

The available input decks we have in RES that may be useful are

Monticello BWR3 206 inch vessel. This may be close to Unit 1.

River Bend class BWR6 218 inch vessel. This is the same vessel diameter as Hatch but the internals are different (more channels, smaller jet pumps and downcomer in BWR6 vs. BWR4). The volume vs. elevation are different but it may be close to Units 2 and 3.

Joe

From: Gilmer, James
Sent: Wednesday, March 23, 2011 10:24 AM
To: Staudenmeier, Joseph
Cc: Uhle, Jennifer; Hoxie, Chris; Donoghue, Joseph
Subject: RE: Assistance Needed in Estimating Salt Buildup and Internals Blockage for Japanese BWR/4

Good Morning!
I just came in after being off most of yesterday. When I left the Ops Center yesterday morning, we had RV water level readings of ~1700 mm on both Units 2 and 3, which means the cores are about half covered (if the level instruments can be believed). I have not received an update this morning, but expect that the level remains about the same. I was attempting to develop a table of free internal volume as a function of vessel elevation based on detailed BWR/4 drawings I have from Hatch, so we could estimate the height of the salt buildup in the channels. I was finding it difficult to do because of the complex geometry in the lower plenum. I was hoping that the TRACE BWR/4 model would have some of that detail, so that a more accurate estimate could be made than with hand calculations. I will give you a call to discuss how the TRACE model could be used.

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From: Staudenmeier, Joseph
Sent: Tuesday, March 22, 2011 2:12 PM
To: RST09 Hoc; Gilmer, James
Cc: Uhle, Jennifer; Hoxie, Chris
Subject: RE: Assistance Needed in Estimating Salt Buildup and Internals Blockage for Japanese BWR/4

Jim,

I did a simple calculation for how much salt is in the vessel assuming it is all retained.

The calculation uses Wikipedia obtained information of 35 g/L of salt in seawater and ~400 g/kg of solubility in seawater.

48 gpm for 8 days gives ~73,000 kg of salt in the vessel.

At 0.4 kg of salt per kg water solubility you would need ~183,000 kg of water in the vessel to dissolve it. Any idea how much water is in the vessel?

If the salt comes out of solution at the boiling boundary it could be coming out of solution and falling into the bottom of the channels at vessel average concentrations lower than the solubility limit.

Joe

From: RST09 Hoc
Sent: Tuesday, March 22, 2011 6:20 AM
To: Staudenmeier, Joseph
Cc: Uhle, Jennifer
Subject: Assistance Needed in Estimating Salt Buildup and Internals Blockage for Japanese BWR/4

Good Morning, Joe!
Could you please come to the Operations Center this morning? We have been asked to do a calculation of the salt buildup and core blockage as a function of time. I believe the TRACE model could be used to do this. I also have detailed design drawings for a US BWR/4 (Hatch) which might be useful. The lower vessel internals geometry is too complex to do a hand calculation of the free volume as a function of vessel elevation. I attempted to, but thought that there may be enough detail in the TRACE model to get a reasonable estimate.

I have other data which you would need, such as:

Sea water flow rate.....48 gpm (injected through recirculation line)
Seawater specific gravity (approx)......1.03
Temperature unknown, but assume 45°F
Injection started 54 hours after shutdown
Rated thermal power (Units 2 through 5).......2381 MWt
Unit 1......1380
I will be handing off to Ed Fuller as the RST Severe Accident/PRA analyst at 7:00 EDT this morning, so I will make sure he has all the information. I will come back to the office later this afternoon after getting some sleep. My cell phone number is (b)(6) if you need additional information. Please copy my NRC e-mail address (james.gilmer@nrc.gov) on any correspondence.

Thanks. And good luck!
Jim Gilmer

Yarsky, Peter

From: Carlson, Donald
Sent: Tuesday, March 22, 2011 4:41 PM
To: Yarsky, Peter
Subject: RE: Congressional Query: FW: This was in media last night related to very bad Japan scenario now in play

Pete,

Thanks for sharing. Your thoughts are thorough, compelling, and consistent with the stated technical opinion.

Don

From: Yarsky, Peter
Sent: Tuesday, March 22, 2011 1:55 PM
To: Carlson, Donald
Subject: FW: Congressional Query: FW: This was in media last night related to very bad Japan scenario now in play

Don,

I got a related question re: SFP from NRR and sent them this reply. I'm pretty sure it is consistent with what ORNL stated.

-Pete

From: Yarsky, Peter
Sent: Wednesday, March 16, 2011 1:54 PM
To: Clifford, Paul
Subject: RE: Congressional Query: FW: This was in media last night related to very bad Japan scenario now in play

Paul,

I think an explosion if the SFP melts is highly unlikely. A steam explosion might ensue if the melted material interacts with liquid water, but criticality leading to a nuclear explosion would not be likely in the least. The depleted fuel, especially, has a very low fissile content. LEU reactors in general operate on the principle of heterogeneity to yield a thermal flux disadvantage factor which allows normal criticality. Significant deformation of the geometry would tend to homogenize the melted material and make criticality even more difficult to achieve.

Looking at some of the previous emails, the concerns don't even seem connected. One says that seawater is more corrosive than typical SFP cooling water and would corrode the cladding cause fuel pin cladding damage. I think that melt in this case would still be countered by the presence of significant water that is purported to cause the cladding damage. If uncover were to occur, and this causes the melting, then criticality concerns are off-set by the general absence of water to act as a moderator.

If the SFP were in a situation where the seawater is sufficiently corrosive that borated racks/plates in the SFP were damaged and the boron leached out, then criticality is more likely (especially since one presumes that the fuel has maintained a more favorable, that is non-melted, geometry) then pulsing could occur. I don't expect pulsing to lead to either steam explosion or to SF melt (since this will ultimately be tempered/regulated by boiling.

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The worst case would be:

Seawater corrodes the boron laden plates/racks/inserts and leaches out the poison. Due to a loss of the reactor building, environmental exposure results in a loss of this boron to the environment (out of the pool) through some mechanism. Loss of the boron allows the SFP to become critical and pulsing ensues. The pulsing results in a boil-off rate greater than the capacity to provide replacement coolant. SFP level drops until some part of the fuel uncovers. This uncovered part (now subcritical) may melt. The melt would, in theory, interact with the two phase level below the point of melt resulting in steam explosion (which could disperse the corium considering a loss of the reactor building).

I cannot postulate a more favorable geometry that a melted SFP could achieve that would allow recriticality.

Those are just my thoughts

-Pete

From: Clifford, Paul
Sent: Wednesday, March 16, 2011 12:16 PM
To: Carlson, Donald; Yarsky, Peter
Subject: FW: Congressional Query: FW: This was in media last night related to very bad Japan scenario now in play
Importance: High

Have you guys ever seen studies on this issue regarding the formation of a critical geometry/mass following core melt / SFP melt.

From: Wood, Kent
Sent: Wednesday, March 16, 2011 11:57 AM
To: Wong, Emma; Clifford, Paul
Subject: FW: Congressional Query: FW: This was in media last night related to very bad Japan scenario now in play

I'm going to need some help on this one.

From: Titus, Brett
Sent: Wednesday, March 16, 2011 10:55 AM
To: Wood, Kent
Subject: FW: Congressional Query: FW: This was in media last night related to very bad Japan scenario now in play
Importance: High

You're the man that we need right now. I'm on my way to talk to you about this.

Brett Titus
301-415-3075

From: Nguyen, Quynh
Sent: Wednesday, March 16, 2011 10:33 AM
To: Titus, Brett
Cc: Meighan, Sean; Couret, Ivonne
Subject: FW: Congressional Query: FW: This was in media last night related to very bad Japan scenario now in play
Importance: High

Brett,

Get the answer and make sure Ivonne sees it!

From: Wittick, Brian
Sent: Wednesday, March 16, 2011 10:24 AM
To: Meighan, Sean; Nguyen, Quynh
Cc: Decker, David
Subject: HOT: Congressional Query: FW: This was in media last night related to very bad Japan scenario now in play

Request answer to the below question. Please note the assertion by a Nuclear Engineer in the article that spent fuel in a SFP can overheat, melt and form a critical mass such that it may explode. It would be best if we could respond with an answer that characterizes the possible scenario of fuel melt in a SFP and the type of energetic force that could result.

Thanks

Brian Wittick
Executive Technical Assistant for Reactors
Office of the Executive Director for Operations
U.S. Nuclear Regulatory Commission
301-415-2496 (w) (b)(6) (c)

From: Decker, David
Sent: Wednesday, March 16, 2011 9:45 AM
To: Wittick, Brian
Cc: Weil, Jenny; Dacus, Eugene; Riley (OCA), Timothy; Powell, Amy
Subject: FW: This was in media last night related to very bad Japan scenario now in play

Brian,
Here's one more question that came in that we'd appreciate your help in getting to the right staff to answer. Thanks!

David

From: Beck, Chris [mailto:Chris.Beck@mail.house.gov]
Sent: Tuesday, March 15, 2011 11:56 AM
To: Decker, David
Subject: Re: This was in media last night related to very bad Japan scenario now in play

Thanks David. Main question is can spent fuel rods (or even fresh fuel rods) create a nuclear fission explosion. - cb

On 3/15/11 11:50 AM, "Decker, David" <David.Decker@nrc.gov> wrote:

Chris,
Let me see if I can get someone to check this out. I hadn't seen the article, and in general, we haven't been commenting too much on news articles since it's hard to know exactly what's happening.

David

From: Beck, Chris [mailto:Chris.Beck@mail.house.gov]
Sent: Tuesday, March 15, 2011 11:39 AM
To: Decker, David
Subject: FW: This was in media last night related to very bad Japan scenario now in play

Hi David,
Does NRC think this story is accurate? Could spent fuel rods create a fission reaction? I am surprised by this, since I thought fuel rods in the US or Japan use low-enriched uranium, which will not result in a fission explosion. Please advise. - cb

Fission Criticality In Cooling Ponds Threaten Explosion At Fukushima
<http://www.dcbureau.org/201103141303/Natural-Resources-News-Service/fission-criticality-in-cooling-ponds-threaten-explosion-at-fukushima.html> <http://www.dcbureau.org/201103141303/Natural-Resources-News-Service/fission-criticality-in-cooling-ponds-threaten-explosion-at-fukushima/Print.html>
Monday, 14 March 2011
Written by Joseph Trento <http://www.dcbureau.org/Staff/joe.html>

Photo: U.S. Navy

The threat of a fission explosion at the Fukushima power facility emerged today when the roof of the number three reactor exploded and fears that a spent fuel pool, located over the reactor, has been compromised. The pool, designed to allow reactor fuel to cool off for several years, was constructed on top of the Fukushima reactors instead of underground. As of 2010, there were 3450 fuel assemblies in the pool at the number three reactor. The destruction of the number three reactor building has experts concerned about whether the spent fuel storage pool, which sits just below the roof, could have survived intact the hydrogen explosion. The explosion was much more severe than Saturday's blast at the number one reactor.

As massive amounts of seawater are pumped by fire trucks into Fukushima's failing nuclear reactors and cooling ponds, the radioactive waste water, now laden with a variety of radioisotopes, is being flushed into the sea.

Just how much danger the spent fuel pool raises is made clear in a November 2010 powerpoint presentation from the Tokyo Electric Company detailing how fuel storage works at the huge complex <http://www.nirs.org/reactorwatch/accidents/6-1_powerpoint.pdf> .

The fuel inventory in the pool is detailed on page 9. According to TEPCO, each reactor generates 700 "waste" fuel assemblies a year, and there are 3450 assemblies in each pool at the Fukushima Daiichi plant, plus another 6,291 in a common pool in a separate building.

As shown in slide 10, the common pool building sits at ground level, with the pool itself above ground. The building also has windows on at least one side, and experts fear these were broken out by the tsunami which would have flooded the building.

According to Albert Donnay, a former nuclear engineer, "This means the common pool is now full of radioactive and corrosive seawater that will cause the fuel assemblies to fail and burst open, as they are doing inside the reactor cores that have been deliberately flooded with seawater. If the pool drains or boils away, the fuel will melt, burn and even possibly explode if the fuel collapses into a sufficiently critical mass."

This may explain why the Japanese government began adding boric acid to the reactor spent fuel pools at the facility shortly after the earthquake and tidal wave.

The Japanese government has not explained why it is adding boric acid and if the acid is being used to prevent criticality in the reactor or in the spent fuel pool. A spokesman for the Embassy of Japan, in Washington, D.C., said the boric acid was being only added as a "precautionary measure," but said the Embassy did not know why. Because the GE reactor's control rods are made of boron, and they were automatically inserted when the earthquake struck to end fission in the reactor, there should have been no need for additional boric acid. But if fuel rods had been compromised and the damaged fuel bundles were not properly separated, they can become critical and boric acid could be used to help prevent a far more serious meltdown in the spent fuel pools.

When the power was lost at the site, the cooling system for the pools would have run out of water in about a day. The water in these pools would heat up and evaporate to the point where the tops of the fuel bundles would be exposed about 24 hours after the cooling system shut down.

Experts fear the explosion rained debris into the pool that stopped natural cooling of the fuel bundles or knocked the bundles together, damaging them, sending the irradiated fuel chunks to the bottom of the pool where they could reach critical mass. "They got a one-two punch," said David Lochbaum, nuclear safety engineer of the Union of Concerned Scientists and a consultant to both industry and the Nuclear Regulatory Commission. Lockbaum told Roger Witherspoon on newjerseynewsroom.com, "If it had just been the earthquake, or just the tsunami, we wouldn't even be talking about this. But the combination of nature was more than they could handle. It doesn't seem that they have lost control yet. But they have definitely run out of options.

"If those solutions - the sea water and the boric acid - don't work, there are no more arrows in the quiver. They have shot everything they have, they have run out of options and there is nothing left."

Fukushima nuclear power plant after the earthquake.

The problem for the Tokyo Electric Company engineers is water containing boric acid has to circulate in the pools to keep the bundles from going critical.

Both United States and Japanese governments have for decades allowed re-racking of the pools to reduce the originally-designed minimum safe distance between the assemblies so that more rods can be stored in each pool. Utilities complained they were running out of storage space on site at the reactors. The problem is if the spent fuel gets too close, they will produce a fission reaction and explode with a force much larger than any fission bomb given the total amount of fuel on the site. All the fuel in all the reactors and all the storage pools at this site (1760 tons of Uranium per slide #4) would be consumed in such a mega-explosion. In comparison, Fat Man and Little Boy weapons dropped on Hiroshima and Nagasaki contained less than a hundred pounds each of fissile material.

According to Donnay, "Several cores worth of spent fuel are usually stored in these pools until they are cool enough to transfer into dry cask storage. In comparison, the reactor itself contains only one core, and its total radioactivity is less than that in each spent core."

Nuclear Information Resource Service led a coalition of groups that petitioned the US Nuclear Regulatory Commission in 2005 requesting emergency enforcement action on the vulnerability of the Mark I and II elevated nuclear waste storage pool.' The coalition's petition to the NRC was denied.

Another worry for engineers is that in 2009 plutonium-based mixed oxide fuel produced by the huge French nuclear power company AREVA was loaded into reactor number three.

Correspondent Celia Sampol spoke to AREVA and the company spokesman said AREVA will not make a specific statement on the issue or on the possible losses for its activities in Japan because "today the priority is for the Japanese authorities to save people and help victims". AREVA's employees in Japan were contacted on Friday, all are safe and some of them left Japan. Anne Lauvergeon "will talk about that in France soon".

Nathalie Bonnefoy, from the MELOX Division of AREVA La Hague, France, said, "Today, the type of fuel used in the

reactor is absolutely not involved in the problems at the Fukushima facility...It's not a matter of the MOX fuel exploding; the problem is if you have a loss of cooling, you have a risk of fusion and the hydrogen released could generate difficulties in contact with air, but it is independent from the type of combustible used."

"In this site, all the MOX fuel has been already loaded in the reactor (it started in October 2010)," no MOX fuel is stored on site here. On others sites, a part of the MOX fuel is stored on site (every 18 months you have to renew one third of the MOX fuel because it has lost efficiency). According to Bonnefoy, four reactors in Japan are burning MOX fuel fabricated by AREVA; the first loading took place in December 2009; AREVA signed contracts with eight (out of eleven) Japanese electric companies to supply MOX fuel, but the French group has no reactors of its own in Japan. The company does have about 100 employees in Japan.

According to NIRS (Nuclear Information Resource Service) at
http://www.nirs.org/factsheets/brownsferryfactsheet.pdf"In
<http://www.nirs.org/factsheets/brownsferryfactsheet.pdf%22In> the GE Mark I design, the irradiated fuel pool, containing billions of curies of high-level atomic waste, sits atop the reactor building, outside primary containment and vulnerable to attack, according to both NRC documents (2001) and the National Academy of Sciences (2005)."

Cutaway drawing of a typical Boiling water reactor (BWR) Mark I Concrete Containment with Steel Torus (suppression pool), as used in the BWR/1, BWR/2, BWR/3 and some BWR/4 model reactors. Photo: Sandia National Laboratories

The same diagram appears in the Sunday New York Times, pA11, with the uppermost rectangular chamber just to the left of the reactor top identified as the spent fuel storage pool, but the accompanying article does not discuss it.

Donnay said, "If these pools are breached (as could have happened in the explosions, Fukushima #3 looks worse than #1) and can no longer hold water, the spent fuel racked inside them will start to overheat, and eventually melt and burn. And since there is no longer any roof above these pools in reactors 1 and 3, all the radioactivity they contain is directly open to the atmosphere."

According to a Defense Department source, the cesium detected in the atmosphere around the plant could be coming from the spent fuel pools.

According to Donnay, there is an additional danger from used fuel being stored in casks: "I'm also worried about the dry cask storage pods that were on the site before the tsunami.

Full casks are very heavy and probably would not be carried away by the flood, but some were probably not full. Any that were only partially filled with spent fuel would have air locked into the unfilled chambers, making them able to float in water. Did the tsunami carry any of these casks away? Are they all still onsite? Before and after satellite photos should be able to show this clearly, but Google Earth is not showing after photos of the Fukushima plant.

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Storm Analysis Consultants
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http://www.linkedin.com/in/johnkappenman

web downloadable pdf articles:
Geomagnetic Storms - Space Weather and Electric Power Grid Impacts -
http://my.pogoplug.com/share/G4CdFCw3zGHXM1MtZIi_BA/

Electron Tube Technology for Power Electronics, HVDC and FACTS Applications -

http://my.pogoplug.com/share/al0GLIFPg08FPUhvEWBcaA/

Breaker Blankit Cold Weather Protection -
http://my.pogoplug.com/share/GTd8J3dQLm0aS2dfASQZOA/

------ End of Forwarded Message

Bamford, Peter

From: Chernoff, Harold
Sent: Wednesday, March 23, 2011 4:04 PM
To: Nelson, Robert; Markley, Michael
Cc: Bamford, Peter
Subject: FW: Action: Could you help me find answers?
Attachments: image004.jpg; image005.jpg

Nelson – for agreement to forward to Scott in response to Platts reporter inquiry on Lochbaum posting (thanks to Pete for this draft):

The scenario described by Mr. Lochbaum presents one plausible mechanism for the accumulation of hydrogen into the secondary containment under the circumstances of the events at the Fukushima site. However, any event investigations should explore all potential mechanisms for the hydrogen accumulation, so that a cause can be established, and appropriate corrective actions can be taken.

At this time, the NRC does not have the details of the Brunswick test scenario immediately available.

For U.S. plants with Mark I containments, strengthened or "hardened" vents were installed as a result of Generic Letter 89-16, "Installation of a Hardened Wetwell Vent." These modifications provided a vent pathway from the primary containment wetwell airspace to a location outside the secondary containment building.

From: Chernoff, Harold
Sent: Wednesday, March 23, 2011 3:23 PM
To: Burnell, Scott
Cc: Saba, Farideh; Broaddus, Doug; Mozafari, Brenda; Markley, Michael; Oesterle, Eric; Bamford, Peter
Subject: RE: Action: Could you help me find answers?

All:

Pete Bamford, from my group, is going to try to put together some words related to this request. At first glance I would opine that there might be some relevance.

hkc

From: Burnell, Scott
Sent: Wednesday, March 23, 2011 10:16 AM
To: Oesterle, Eric; Markley, Michael
Cc: Chernoff, Harold; Saba, Farideh; Broaddus, Doug; Mozafari, Brenda
Subject: RE: Action: Could you help me find answers?

I can certainly repeat the "preliminary review" language in the second sentence, whatever you're most comfortable with. I just don't want to leave the impression UCS has found something "new" from 35 years ago.

From: Oesterle, Eric
Sent: Wednesday, March 23, 2011 10:15 AM
To: Markley, Michael

000|438

Cc: Chernoff, Harold; Burnell, Scott; Saba, Farideh; Broaddus, Doug; Mozafari, Brenda
Subject: RE: Action: Could you help me find answers?

Hey Folks,

Shouldn't we convey the notion that our *initial look* into this appears to result in low relevance to US plants but we are continuing research, examination of the records, etc. It just seems to me like we are brushing this off too quickly without having done due diligence. Just my opinion.

Eric

From: Nelson, Robert
Sent: Wednesday, March 23, 2011 9:54 AM
To: Markley, Michael; Oesterle, Eric
Cc: Chernoff, Harold
Subject: Action: Could you help me find answers?
Importance: High

Please coordinate review with Harold.

NELSON

From: Burnell, Scott
Sent: Wednesday, March 23, 2011 9:49 AM
To: Broaddus, Doug; Saba, Farideh
Cc: Mozafari, Brenda; Markley, Michael; Nelson, Robert
Subject: RE: Could you help me find answers?
Importance: High

Folks;

Based on this thread and existing Mark I Q&A, our basic answer seems to be this:

The NRC's preliminary review of available information indicates a test similar to the one UCS describes took place at Brunswick. Given the passage of more than 30 years, including the efforts of the NRC's Containment Performance Improvement program in the late 1980s and early 1990s, that test's relevance to U.S. plants and current events is considered low. As part of the CPI effort, all U.S. BWRs with Mark I containments installed hardened vents to ensure containment integrity would be maintained under accident conditions.

Please let me know if that's acceptable. Thanks.

Scott

From: Broaddus, Doug
Sent: Tuesday, March 22, 2011 6:54 PM
To: Saba, Farideh
Cc: Mozafari, Brenda; Burnell, Scott; Markley, Michael; Nelson, Robert
Subject: RE: Could you help me find answers?

I reviewed the report, as well, and it appears to only address the successful conduct of the test to 71.5 psi, and does not indicate that an earlier attempt was unsuccessful due to leakage that prevented achieving the full test pressure. The report does indicate that the Structural Integrity Test (SIT) was performed in conjunction with an Integrated Leak Rate Test (ILRT) (see page 5.1). However, this report only provides the results of the SIT, and indicates that the results of the

ILRT are provided in a separate report. A discussion of leakage during the test would more likely be in the report prepared for the ILRT results. Do you know if the ILRT report was ever submitted on the docket?

Doug

From: Saba, Farideh
Sent: Tuesday, March 22, 2011 6:26 PM
To: Burnell, Scott; Markley, Michael; Nelson, Robert
Cc: Broaddus, Doug; Mozafari, Brenda
Subject: RE: Could you help me find answers?

I understand. I have sent this document FYI. I have glanced through the document, but I could not find any information related to leakage from the containment to the reactor building.

Farideh E. Saba, P.E.
Senior Project Manager
NRC/ADRO/NRR/DORL
301-415-1447
Mail Stop O-8G9A
Farideh.Saba@NRC.GOV

From: Burnell, Scott
Sent: Tuesday, March 22, 2011 6:02 PM
To: Saba, Farideh; Markley, Michael; Nelson, Robert
Cc: Broaddus, Doug; Mozafari, Brenda
Subject: Re: Could you help me find answers?
Importance: High

Licensee documents should come directly from them in a case like this, not through us. We could use the documents to inform our answers, of course.

Sent from an NRC Blackberry
Scott Burnell
(b)(6)

From: Saba, Farideh
To: Markley, Michael; Nelson, Robert; Burnell, Scott
Cc: Broaddus, Doug; Mozafari, Brenda
Sent: Tue Mar 22 17:57:59 2011
Subject: RE: Could you help me find answers?

FYI, the media has asked the licensee the same question. The licensee has found an old document that may have the information related to the containment testing. The licensee has scanned the document and sent me in two emails (big files). I will forward this document in the separate emails. It does not appear that this document is not a publicly available document. However, the licensee itself may provide this document to the media.

Farideh E. Saba, P.E.
Senior Project Manager
NRC/ADRO/NRR/DORL
301-415-1447
Mail Stop O-8G9A

Farideh.Saba@NRC.GOV

From: Markley, Michael
Sent: Tuesday, March 22, 2011 3:50 PM
To: Saba, Farideh; Mozafari, Brenda
Cc: Broaddus, Doug
Subject: FW: Could you help me find answers?

Quick Turnaround: Please see the note below. Any insights on the Brunswick aspect?

From: Nelson, Robert
Sent: Tuesday, March 22, 2011 2:08 PM
To: Burnell, Scott
Cc: Markley, Michael
Subject: RE: Could you help me find answers?

NELSON

From: Burnell, Scot.
Sent: Tuesday, March 22, 2011 11:18 AM
To: Nelson, Robert; Meighan, Sean; Thomas, Eric
Subject: FW: Could you help me find answers?
Importance: High

Bob et al;

Deadline's actually noon tomorrow, but with a research project like this that's not much help. I would think we could focus on the end result – improved drywell seals, if my quick read of the UCS item is worth anything. Thanks!

Scott

From: Xie, Yanmei [mailto:yanmei_xie@platts.com]
Sent: Tuesday, March 22, 2011 10:57 AM
To: Burnell, Scott; Brenner, Eliot
Subject: FW: Could you help me find answers?

And my deadline is 5pm today.

Yanmei Xie

Associate Editor

Platts Nuclear Publications

Office: (202) 383-2161

Mobile: (b)(6)

www.platts.com

From: Xie, Yanmei
Sent: Tuesday, March 22, 2011 10:56 AM
To: 'Brenner, Eliot'; 'Burnell, Scott'
Subject: Could you help me find answers?

Hi, Eliot and Scott,

I hope you guys were able to catch some much needed rest during the weekend. I feel a little ashamed to say that my weekend was actually quite relaxing, while two of my colleagues were on duty.

The Union of Concerned Scientists said "A little-known test performed decades ago at the Brunswick" could explain the hydrogen explosions at Japan's Fukushima Daiichi plant. See the UCS analysis below. Could you help me get answers to the following questions?

1. Did the test actually happen? If so,
2. Why was the test preformed and when was it performed?
3. Did the UCS analysis below accurate reflect the test and the test result?
4. Did Brunswick report the test results to NRC or the industry? If so,
5. Did either the NRC or industry require or suggestion any modifications to mitigate the risk?
6. Did Brunswick take measures to mitigate the risk?

Your help is greatly appreciated!

Possible Cause of Reactor Building Explosions

| by Dave Lochbaum | nuclear power | nuclear power safety | Japan nuclear |

Dramatic videos show the explosions that severely damaged the reactor buildings at first Unit 1 and then Unit 3 at the stricken Fukushima Dai-Ichi nuclear plant in Japan. The explosions are attibuted to the ignition of hydrogen gas that collected within the reactor buildings. This was early in the crisis, and before the spent fuel pools are thought to have lost water and started producing hydrogen.

The hydrogen was likely produced by damaged fuel rods in the reactor core. To reduce pressure in the reactor vessel, some of that hydrogen was released from the vessel into the primary containment structure of the reactor.

A key, unsolved riddle is how a significant amount of hydrogen escaped from the primary containment into the reactor building, and how this low-probability event would have happened in mulitple reactors.

How Hydrogen Got into Primary Containment

Figure 1 shows a cross-sectional view of a boiling water reactor with a Mark I containment like that at Fukushima Dai-Ichi. The reactor core is housed within a metal reactor vessel. The reactor vessel is enclosed within the primary containment structure. The reactor building completely surrounds the containment structure. The reactor building walls are made of 18 to 30 inch-thick concrete up to the elevation of the refueling platform. The walls are made of metal from that elevation to the roof.

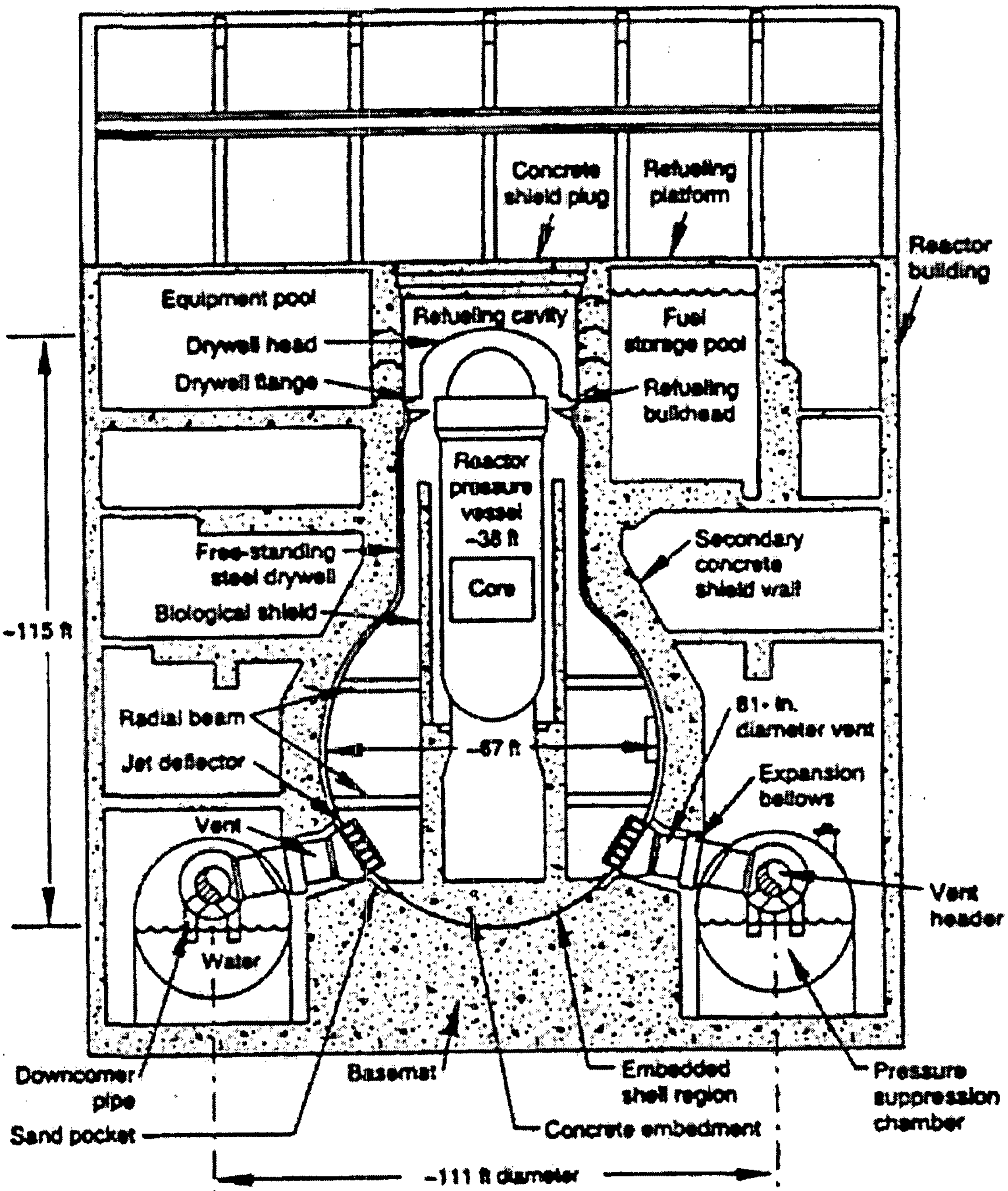

Figure 1

The hydrogen gas most likely came from a chemical reaction between water and the metal cladding of fuel rods in the reactor cores when the water level inside the reactor vessels dropped low enough to expose at least the upper core regions.The hydrogen gas initially collected in the reactor vessel.

To cool the fuel in the reactor, workers attempted to pump seawater into the reactor vessel. As pressure inside the reactor vessel increased, it kept water from flowing into the reactor. Periodically, workers opened valves to vent steam and gas from the reactor vessel to into the pressure suppression chamber (also called the torus). The gas, including hydrogen, collected in the torus and periodically equalized with the air space in the drywell.

When pressure in the primary containment (the combination of the drywell and the torus) rose too high, workers vented the containment to the atmosphere. This vent piping passed through the reactor building, but discharged well outside of it, and should not have led to a hydrogen buildup inside the building.

How Hydrogen May Have Gotten from Primary Containment into the Reactor Building

The destruction of the Unit 1 and 3 reactor buildings appears to have been caused by hydrogen explosions. As noted above, an unanswered question is how the hydrogen got into the reactor buildings. A little-known test performed decades ago at the Brunswick nuclear plant in North Carolina may hold the key to answering that question.

To satisfy a requirement in the American Society of Mechanical Engineers (ASME) code for prototype containment designs, workers performed a structual integirty test on the reactor at Brunswick in the 1970s.

The primary containment structure at Brunswick was designed to withstand an internal pressure of 62 pounds per square inch (psi). The ASME code required it to be tested at 71 psi. This test involved pumping air into the containment structure until the pressure rose to 71 psi. The pumps would then be turned off and the pressure would be monitored for several hours to verify that it remained fairly constant, indicating that the primary containment was intact and not leaking. During this time, workers would record data from strain gauges and other instrumentation to verify that structural loads were properly distributed.

But as workers increased the containment pressure they encountered a problem. The pressure stopped increasing and remained constant at 70 psi. The pumps continued to push air into the containment, but its pressure just stopped increasing. This unexpected plateau started a hunt for air leaking from the containment somewhere.

A hissing sound attracted workers to the top of the containment structure. They identified air leaking through the drywell flange area (see Figure 1). The metal drywell head (see Figure 2) is bolted to the metal drywell with a rubber O-ring between the surfaces to provide a good seal fit.

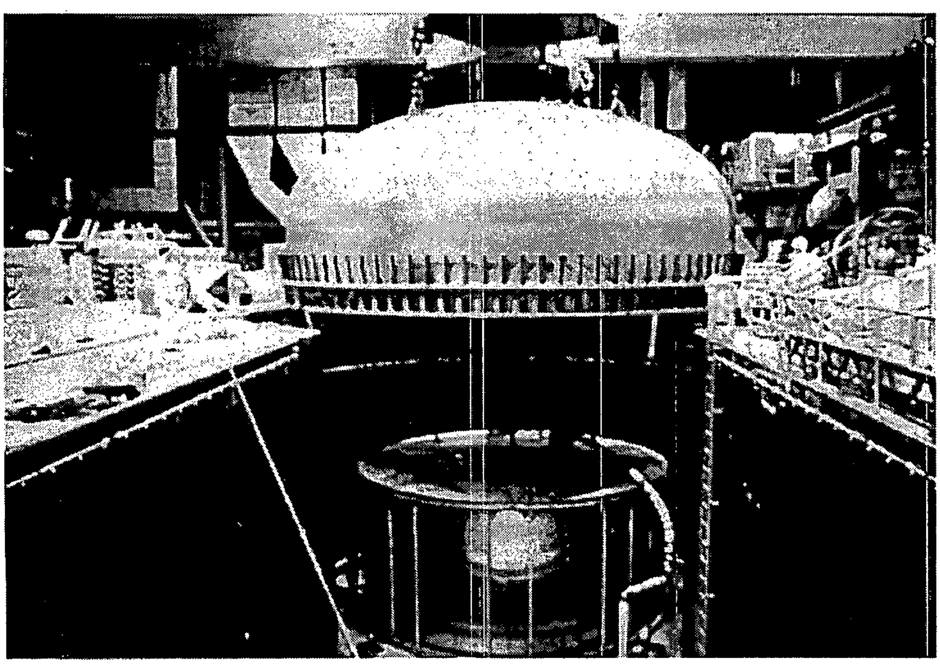

Figure 2

Workers found that the containment pressure of 70 psi pushing upward against the inner dome of the drywell head lifted it off the drywell flange enough to provide a pathway for air to leak from the containment. That air leaked into the area labeled refueling cavity in Figure 1. The refueling cavity is located outside the primary containment but inside the reactor building.

At Brunswick, workers tightened the drywell head bolts beyond the amount specified in the reactor plans in order to reduce the leak rate and continue the test. While workers conducted pressure tests at all nuclear reactors prior to initial startup and periodically thereafter, these tests were performed at or below the containment design-pressure of 62 psi. So none of them reached the pressure that caused the leak around the drywell head.

In other words, had Brunswick not featured a prototype containment design, its initial and recurring pressure tests would have been conducted at 62 psi, not 71 psi. Leaking from the drywell head was not observed until the containment pressure rose to 70 psi.

How does this Brunswick containment testing experience relate to the reactor building explosions experienced at Fukushima Dai-Ichi Units 1 and 3?

Like Brunswick, the containment design at those reactors features a drywell head bolted onto the lower portion of the drywell. Workers at these reactors faced siginficant problems cooling the reactor cores. The combined effects of the earthquake and tsunami left the reactors without ac electrical power. The only dc-powered (i.e., battery-powered) backup system was lost when the batteries were exhausted. Workers turned to their only remaining option: injecting sea water into the reactor vessels to cool the reactor cores.

The pumps used to pump seawater into the vessel operated at low pressure. When seawater entered the reactor vessel, it was heated by the hot reactor core to the point of boiling. Steam produced by the boiling increased the pressure inside the reactor vessel. To prevent this rising pressure from hindering seawater from being pumped into reactor, workers periodically vented the reactor vessel. This carried steam and gas, including hydrogen, into the primary containment. This flow in turn increased the pressure inside containment. When containment pressure rose too high, workers vented the containment to the atmosphere.

The workers properly sought to minimize the amount of gas they vented from containment to the atmosphere to lessen the amount of radiation released. They did this by allowing the containment pressure to rise as high as tolerable between ventings.

It is possible that the containment pressures rose high enough to replicate the Brunswick experience by lifting the drywell head enough to allow hydrogen and other gases to leak into the refueling cavity and reactor building. If so, hydrogen could build up to an explosive mixture.

This tragedy will be closely examined for its causes. That scrutiny must determine how hydrogen got into the reactor building early in the crisis. The drywell head pathway may be that answer.

Answering this question is critical to prevent hydrogen explosions at the other reactors at Fukushima.

If this mechanism is the cause of the leak, it could be averted easily and effectively simply by changing the venting procedures so that workers vent the containment pressure to the atmosphere more frequently and do not let it build up to such high level. Taking such action might moderately increase the amount of radioactive gases vented into the atmosphere, but could eliminate a source of hydrogen inside the reactor buildings that could cause another explosion.

Authorities should launch an investigation to pinpoint the source of the hydrogen leak to eliminate this risk in the future. But in the meantime, since the Brunswick test showed that this containment is vulnerable to high-

pressure leaking, Tokyo Electric Power Co. can and should take immediate steps to avoid creating such a leak by changing its procedures to vent the containment before it builds up to such high pressure (70 psi).

Yanmei Xie

Associate Editor

Platts Nuclear Publications

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Mobile: (b)(6)

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Nelson, Robert

From: Nelson, Robert
Sent: Wednesday, March 23, 2011 4:19 PM
To: Chernoff, Harold
Subject: RE: Action: Could you help me find answers?
Attachments: image001.jpg; image002.jpg

I don't want to imply a commitment on our part to conduct such an investigation. If you agree with these changes, you can send it to OPA

NELSON

From: Chernoff, Harold
Sent: Wednesday, March 23, 2011 4:04 PM
To: Nelson, Robert; Markley, Michael
Cc: Bamford, Peter
Subject: FW: Action: Could you help me find answers?

Nelson – for agreement to forward to Scott in response to Platts reporter inquiry on Lochbaum posting (thanks to Pete for this draft)

The scenario described by Mr. Lochbaum presents one plausible mechanism for the accumulation of hydrogen into the secondary containment under the circumstances of the events at the Fukushima site. However, ~~any event investigations should explore~~ because all potential mechanisms for the hydrogen accumulation have not been investigated, no conclusions can be reached ~~so that a cause can be established, and appropriate corrective actions can be taken.~~

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From: Chernoff, Harold
Sent: Wednesday, March 23, 2011 3:23 PM
To: Burnell, Scott
Cc: Saba, Farideh; Broaddus, Doug; Mozafari, Brenda; Markley, Michael; Oesterle, Eric; Bamford, Peter
Subject: RE: Action: Could you help me find answers?

All:

Pete Bamford, from my group, is going to try to put together some words related to this request. At first glance I would opine that there might be some relevance.

hkc

From: Burnell, Scott
Sent: Wednesday, March 23, 2011 10:16 AM

000/439

To: Oesterle, Eric; Markley, Michael
Cc: Chernoff, Harold; Saba, Farideh; Broaddus, Doug; Mozafari, Brenda
Subject: RE: Action: Could you help me find answers?

I can certainly repeat the "preliminary review" language in the second sentence, whatever you're most comfortable with. I just don't want to leave the impression UCS has found something "new" from 35 years ago.

From: Oesterle, Eric
Sent: Wednesday, March 23, 2011 10:15 AM
To: Markley, Michael
Cc: Chernoff, Harold; Burnell, Scott; Saba, Farideh; Broaddus, Doug; Mozafari, Brenda
Subject: RE: Action: Could you help me find answers?

Hey Folks,

Shouldn't we convey the notion that our *initial look* into this appears to result in low relevance to US plants but we are continuing research, examination of the records, etc. It just seems to me like we are brushing this off too quickly without having done due diligence. Just my opinion.

Eric

From: Nelson, Robert
Sent: Wednesday, March 23, 2011 9:54 AM
To: Markley, Michael; Oesterle, Eric
Cc: Chernoff, Harold
Subject: Action: Could you help me find answers?
Importance: High

Please coordinate review with Harold.

NELSON

From: Burnell, Scott
Sent: Wednesday, March 23, 2011 9:49 AM
To: Broaddus, Doug; Saba, Farideh
Cc: Mozafari, Brenda; Markley, Michael; Nelson, Robert
Subject: RE: Could you help me find answers?
Importance: High

Folks;

Based on this thread and existing Mark I Q&A, our basic answer seems to be this:

The NRC's preliminary review of available information indicates a test similar to the one UCS describes took place at Brunswick. Given the passage of more than 30 years, including the efforts of the NRC's Containment Performance Improvement program in the late 1980s and early 1990s, that test's relevance to U.S. plants and current events is considered low. As part of the CPI effort, all U.S. BWRs with Mark I containments installed hardened vents to ensure containment integrity would be maintained under accident conditions.

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Scott

From: Broaddus, Doug
Sent: Tuesday, March 22, 2011 6:54 PM
To: Saba, Farideh
Cc: Mozafari, Brenda; Burnell, Scott; Markley, Michael; Nelson, Robert
Subject: RE: Could you help me find answers?

I reviewed the report, as well, and it appears to only address the successful conduct of the test to 71.5 psi, and does not indicate that an earlier attempt was unsuccessful due to leakage that prevented achieving the full test pressure. The report does indicate that the Structural Integrity Test (SIT) was performed in conjunction with an Integrated Leak Rate Test (ILRT) (see page 5.1). However, this report only provides the results of the SIT, and indicates that the results of the ILRT are provided in a separate report. A discussion of leakage during the test would more likely be in the report prepared for the ILRT results. Do you know if the ILRT report was ever submitted on the docket?

Doug

From: Saba, Farideh
Sent: Tuesday, March 22, 2011 6:26 PM
To: Burnell, Scott; Markley, Michael; Nelson, Robert
Cc: Broaddus, Doug; Mozafari, Brenda
Subject: RE: Could you help me find answers?

I understand. I have sent this document FYI. I have glanced through the document, but I could not find any information related to leakage from the containment to the reactor building.

Farideh E. Saba, P.E.
Senior Project Manager
NRC/ADRO/NRR/DORL
301-415-1447
Mail Stop O-8G9A
Farideh.Saba@NRC.GOV

From: Burnell, Scott
Sent: Tuesday, March 22, 2011 6:02 PM
To: Saba, Farideh; Markley, Michael; Nelson, Robert
Cc: Broaddus, Doug; Mozafari, Brenda
Subject: Re: Could you help me find answers?
Importance: High

Licensee documents should come directly from them in a case like this, not through us. We could use the documents to inform our answers, of course.

Sent from an NRC Blackberry
Scott Burnell
(b)(6)

From: Saba, Farideh
To: Markley, Michael; Nelson, Robert; Burnell, Scott
Cc: Broaddus, Doug; Mozafari, Brenda
Sent: Tue Mar 22 17:57:59 2011
Subject: RE: Could you help me find answers?

FYI, the media has asked the licensee the same question. The licensee has found an old document that may have the information related to the containment testing. The licensee has scanned the document and sent me

in two emails (big files). I will forward this document in the separate emails. It does not appear that this document is not a publicly available document. However, the licensee itself may provide this document to the media.

Farideh E. Saba, P.E.
Senior Project Manager
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301-415-1447
Mail Stop O-8G9A
Farideh.Saba@NRC.GOV

From: Markley, Michael
Sent: Tuesday, March 22, 2011 3:50 PM
To: Saba, Farideh; Mozafari, Brenda
Cc: Broaddus, Doug
Subject: FW: Could you help me find answers?

Quick Turnaround: Please see the note below. Any insights on the Brunswick aspect?

From: Nelson, Robert
Sent: Tuesday, March 22, 2011 2:08 PM
To: Burnell, Scott
Cc: Markley, Michael
Subject: RE: Could you help me find answers?

NELSON

From: Burnell, Scott
Sent: Tuesday, March 22, 2011 11:18 AM
To: Nelson, Robert; Meighan, Sean; Thomas, Eric
Subject: FW: Could you help me find answers?
Importance: High

Bob et al;

Deadline's actually noon tomorrow, but with a research project like this that's not much help. I would think we could focus on the end result – improved drywell seals, if my quick read of the UCS item is worth anything. Thanks!

Scott

From: Xie, Yanmei [mailto:yanmei_xie@platts.com]
Sent: Tuesday, March 22, 2011 10:57 AM
To: Burnell, Scott; Brenner, Eliot
Subject: FW: Could you help me find answers?

And my deadline is 5pm today.

Yanmei Xie

Associate Editor

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From: Xie, Yanmei
Sent: Tuesday, March 22, 2011 10:56 AM
To: 'Brenner, Eliot'; 'Burnell, Scott'
Subject: Could you help me find answers?

Hi, Eliot and Scott,

I hope you guys were able to catch some much needed rest during the weekend. I feel a little ashamed to say that my weekend was actually quite relaxing, while two of my colleagues were on duty.

The Union of Concerned Scientists said "A little-known test performed decades ago at the Brunswick" could explain the hydrogen explosions at Japan's Fukushima Daiichi plant. See the UCS analysis below. Could you help me get answers to the following questions?

1. Did the test actually happen? If so,
2. Why was the test preformed and when was it performed?
3. Did the UCS analysis below accurate reflect the test and the test result?
4. Did Brunswick report the test results to NRC or the industry? If so,
5. Did either the NRC or industry require or suggestion any modifications to mitigate the risk?
6. Did Brunswick take measures to mitigate the risk?

Your help is greatly appreciated!

Possible Cause of Reactor Building Explosions

| by Dave Lochbaum | nuclear power | nuclear power safety | Japan nuclear |

Dramatic videos show the explosions that severely damaged the reactor buildings at first Unit 1 and then Unit 3 at the stricken Fukushima Dai-Ichi nuclear plant in Japan. The explosions are attibuted to the ignition of hydrogen gas that collected within the reactor buildings. This was early in the crisis, and before the spent fuel pools are thought to have lost water and started producing hydrogen.

The hydrogen was likely produced by damaged fuel rods in the reactor core. To reduce pressure in the reactor vessel, some of that hydrogen was released from the vessel into the primary containment structure of the reactor.

A key, unsolved riddle is how a significant amount of hydrogen escaped from the primary containment into the reactor building, and how this low-probability event would have happened in mulitple reactors.

How Hydrogen Got into Primary Containment

Figure 1 shows a cross-sectional view of a boiling water reactor with a Mark I containment like that at Fukushima Dai-Ichi. The reactor core is housed within a metal reactor vessel. The reactor vessel is enclosed within the primary containment structure. The reactor building completely surrounds the containment structure. The reactor building walls are made of 18 to 30 inch-thick concrete up to the elevation of the refueling platform. The walls are made of metal from that elevation to the roof.

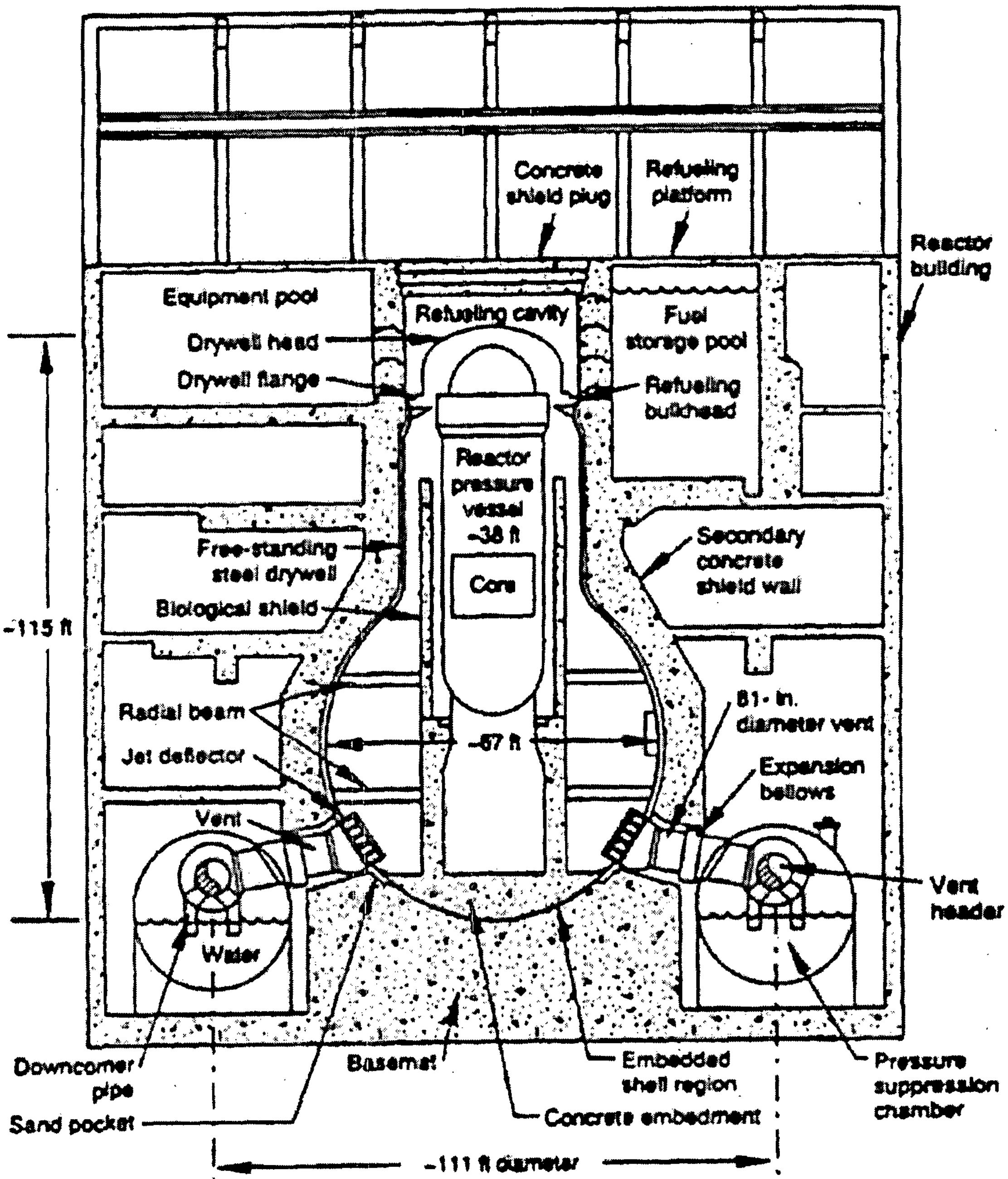

Figure 1

The hydrogen gas most likely came from a chemical reaction between water and the metal cladding of fuel rods in the reactor cores when the water level inside the reactor vessels dropped low enough to expose at least the upper core regions.The hydrogen gas initially collected in the reactor vessel.

To cool the fuel in the reactor, workers attempted to pump seawater into the reactor vessel. As pressure inside the reactor vessel increased, it kept water from flowing into the reactor. Periodically, workers opened valves to vent steam and gas from the reactor vessel to into the pressure suppression chamber (also called the torus). The gas, including hydrogen, collected in the torus and periodically equalized with the air space in the drywell.

When pressure in the primary containment (the combination of the drywell and the torus) rose too high, workers vented the containment to the atmosphere. This vent piping passed through the reactor building, but discharged well outside of it, and should not have led to a hydrogen buildup inside the building.

How Hydrogen May Have Gotten from Primary Containment into the Reactor Building

The destruction of the Unit 1 and 3 reactor buildings appears to have been caused by hydrogen explosions. As noted above, an unanswered question is how the hydrogen got into the reactor buildings. A little-known test performed decades ago at the Brunswick nuclear plant in North Carolina may hold the key to answering that question.

To satisfy a requirement in the American Society of Mechanical Engineers (ASME) code for prototype containment designs, workers performed a structual integirty test on the reactor at Brunswick in the 1970s.

The primary containment structure at Brunswick was designed to withstand an internal pressure of 62 pounds per square inch (psi). The ASME code required it to be tested at 71 psi. This test involved pumping air into the containment structure until the pressure rose to 71 psi. The pumps would then be turned off and the pressure would be monitored for several hours to verify that it remained fairly constant, indicating that the primary containment was intact and not leaking. During this time, workers would record data from strain gauges and other instrumentation to verify that structural loads were properly distributed.

But as workers increased the containment pressure they encountered a problem. The pressure stopped increasing and remained constant at 70 psi. The pumps continued to push air into the containment, but its pressure just stopped increasing. This unexpected plateau started a hunt for air leaking from the containment somewhere.

A hissing sound attracted workers to the top of the containment structure. They identified air leaking through the drywell flange area (see Figure 1). The metal drywell head (see Figure 2) is bolted to the metal drywell with a rubber O-ring between the surfaces to provide a good seal fit.

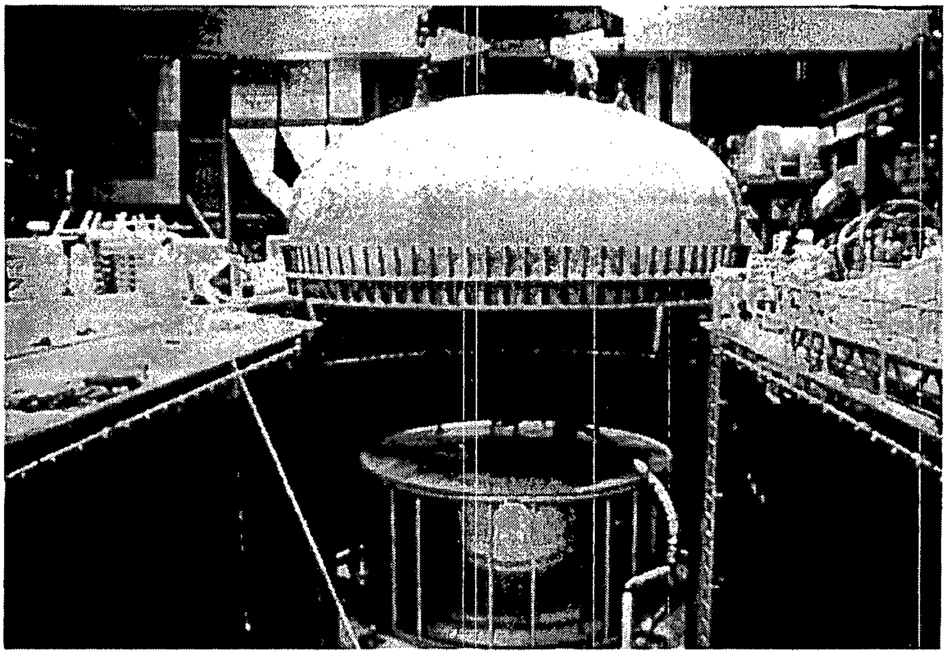

Figure 2

Workers found that the containment pressure of 70 psi pushing upward against the inner dome of the drywell head lifted it off the drywell flange enough to provide a pathway for air to leak from the containment. That air leaked into the area labeled refueling cavity in Figure 1. The refueling cavity is located outside the primary containment but inside the reactor building.

At Brunswick, workers tightened the drywell head bolts beyond the amount specified in the reactor plans in order to reduce the leak rate and continue the test. While workers conducted pressure tests at all nuclear reactors prior to initial startup and periodically thereafter, these tests were performed at or below the containment design-pressure of 62 psi. So none of them reached the pressure that caused the leak around the drywell head.

In other words, had Brunswick not featured a prototype containment design, its initial and recurring pressure tests would have been conducted at 62 psi, not 71 psi. Leaking from the drywell head was not observed until the containment pressure rose to 70 psi.

How does this Brunswick containment testing experience relate to the reactor building explosions experienced at Fukushima Dai-Ichi Units 1 and 3?

Like Brunswick, the containment design at those reactors features a drywell head bolted onto the lower portion of the drywell. Workers at these reactors faced siginficant problems cooling the reactor cores. The combined effects of the earthquake and tsunami left the reactors without ac electrical power. The only dc-powered (i.e., battery-powered) backup system was lost when the batteries were exhausted. Workers turned to their only remaining option: injecting sea water into the reactor vessels to cool the reactor cores.

The pumps used to pump seawater into the vessel operated at low pressure. When seawater entered the reactor vessel, it was heated by the hot reactor core to the point of boiling. Steam produced by the boiling increased the pressure inside the reactor vessel. To prevent this rising pressure from hindering seawater from being pumped into reactor, workers periodically vented the reactor vessel. This carried steam and gas, including hydrogen, into the primary containment. This flow in turn increased the pressure inside containment. When containment pressure rose too high, workers vented the containment to the atmosphere.

The workers properly sought to minimize the amount of gas they vented from containment to the atmosphere to lessen the amount of radiation released. They did this by allowing the containment pressure to rise as high as tolerable between ventings.

It is possible that the containment pressures rose high enough to replicate the Brunswick experience by lifting the drywell head enough to allow hydrogen and other gases to leak into the refueling cavity and reactor building. If so, hydrogen could build up to an explosive mixture.

This tragedy will be closely examined for its causes. That scrutiny must determine how hydrogen got into the reactor building early in the crisis. The drywell head pathway may be that answer.

Answering this question is critical to prevent hydrogen explosions at the other reactors at Fukushima.

If this mechanism is the cause of the leak, it could be averted easily and effectively simply by changing the venting procedures so that workers vent the containment pressure to the atmosphere more frequently and do not let it build up to such high level. Taking such action might moderately increase the amount of radioactive gases vented into the atmosphere, but could eliminate a source of hydrogen inside the reactor buildings that could cause another explosion.

Authorities should launch an investigation to pinpoint the source of the hydrogen leak to eliminate this risk in the future. But in the meantime, since the Brunswick test showed that this containment is vulnerable to high-pressure leaking, Tokyo Electric Power Co. can and should take immediate steps to avoid creating such a leak by changing its procedures to vent the containment before it builds up to such high pressure (70 psi).

Yanmei Xie

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From: Droggitis, Spiros
Sent: Thursday, March 24, 2011 11:44 AM
To: Powell, Amy; Decker, David; Riley (OCA), Timothy
Subject: FW: DNDO News 3/24/2011
Attachments: DNDO NEWS 3-24-11.htm

From: Bolling, Lloyd [mailto:Lloyd.Bolling@dhs.gov]
Sent: Thursday, March 24, 2011 11:42 AM
To: Layton, Michael; Reis, Terrence; Jones, Cynthia; Wastler, Sandra; Jackson, Gerard
Cc: Droggitis, Spiros; Dembek, Stephen; Owens, Janice; Breskovic, Clarence
Subject: DNDO News 3/24/2011

Attached is the DNDO News for Thursday, March 24, 2011.

Summary of news items:

1. CBP monitors radiation in travelers and goods from Japan.
2. Japan nuclear crisis revives long U.S. fight on spent fuel.
3. Tiny amount of radiation from Japan found in Colorado.

Lloyd Bolling, NRC Liaison
Operations Support Directorate
Domestic Nuclear Detection Office
Department of Homeland Security
Phone: 202-254-7123
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Fax: 202-254-7752
Lloyd.Bolling@dhs.gov

000/440

March 24, 2011 DNDO News Brief

Customs and Border Protection Monitoring Radiation of Travelers, Goods from Japan
Boeder Scope, Imperial Valley News - No aircraft entering the U.S. has tested positive for radiation at harmful levels. To address radiological and nuclear risks, CBP employs several types of radiation detection equipment in its operations at both air and sea ports, and uses this equipment, along with specific operational protocols, to resolve any security or safety risks that are identified with inbound travelers and cargo. http://imperialvalleynews.com/index.php?option=com_content&task=view&id=9859&Itemid=1

Japan Nuclear Crisis Revives Long US Fight on Spent Fuel
Matthew Wald, New York Times - The threat of the release of highly radioactive spent fuel at a Japanese nuclear plant has revived a debate in the United States about how to manage such waste and has led to new recriminations over a derailed plan for a national repository in Nevada.
http://www.nytimes.com/2011/03/24/us/24yucca.html?_r=1&partner=rss&emc=rss

Tiny Amount of Radiation from Japan Found in Colorado
9NEWS.com - State Health officials report that a tiny amount of radiation from the Fukushima Plant in Japan has been detected in Colorado.
http://www.9news.com/news/local/article/189195/346/Tiny-amount-of-radiation-from-Japan-found-in-Colorado?odyssey=mod%7Cnewswell%7Ctext%7CFRONTPAGE%7Ct

From: LIA10 Hoc
Sent: Thursday, March 24, 2011 12:01 PM
To: LIA02 Hoc; LIA03 Hoc
Cc: (b)(6)
Subject: Paul Hersey contact

(b)(6)

000441

Kock, Andrea

From: Nieh, Ho
Sent: Thursday, March 24, 2011 9:30 AM
To: OPA Resource; Brenner, Eliot; Hayden, Elizabeth
Subject: Commissioner Ostendorff remarks at Japan Commission meeting
Attachments: 2011-03-18 Commission Briefing Nuclear Events in Japan.docx

Attached are Commissioner Ostendorff's remarks as prepared for Monday's Commission meeting.

Please note, the he orally delivered an abridged version of this due to the time.

Please make this available on his webpage.

Many thanks.

Ho

Ho Nieh
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000/442

Good morning. This is a vitally important meeting for the Commission and the country.

First, I want to extend my deepest sympathies to the people of Japan. The consequences and loss of life from the earthquake and tsunami are simply devastating. I am fully mindful of the valiant efforts of the workers and first responders at the Fukushima site who have directly faced the challenges of this tragic event. Our thoughts and prayers are with all.

Let me also commend and thank the Chairman, the EDO, and the NRC staff for their efforts to date in supporting the NRC's monitoring and assistance associated with events in Japan. I appreciate the hard work going on 24/7 at the NRC Operations Center since March 11. I have been impressed with the technical competence and professionalism demonstrated by the NRC staff.

I am also grateful for the highly competent team of NRC experts dispatched to assist our Japanese friends. While dismayed by the tragedy, at the same time as a Commissioner I am extraordinarily proud of the commitment of the NRC team to proactively provide assistance to Japan.

The events that have unfolded at the Fukushima Daiichi nuclear power plant over the last 10 days are stark and have caused me to deeply reflect on my responsibilities as a regulator of the US nuclear industry. On one hand, I believe that our existing licensing and oversight activities assure us that the 104 commercial nuclear power plants in this country are safe. On the other hand, I know that we must (and most certainly will) conduct a thoughtful and rationale examination of the NRC's regulatory framework with the information and lessons learned resulting from the incidents in Japan. I do not think the NRC can wait until every lesson learned is identified before starting this important work. Rather, I believe it is appropriate for the NRC to conduct a timely and focused review of our regulatory framework in the key areas relevant to what we know-and will come to know as lessons emerge- about what happened at the Fukushima site. [While we will hear shortly from the NRC staff on this topic, I believe that topics such as beyond design basis events and severe accident mitigation are potential areas that might receive focused attention].

I was also encouraged that the US nuclear industry has taken some proactive steps to verify and walk down capabilities at their sites. It will be important that the NRC remains engaged with the industry on the follow up activities related to this unprecedented event in Japan.

As we head down this path, I know that we all must be mindful of the challenges ahead. As stated by the Chairman several times in recent days, we need to conduct a thoughtful and systematic review. And, we need to do this in a way that clearly and effectively communicates to the American people what this event means for the safety of commercial nuclear power plants in the United States.

Thank you.

Bozin, Sunny

From: Nieh, Ho
Sent: Thursday, March 24, 2011 7:15 PM
To: Ostendorff, William
Subject: Fw: UPMC meeting invitation

Fyi - will go over invite w you next week.

Wanted to get some more info first.

It's a date in May in DC. U r available. Interest is post Fukushima stuff ie, lessons learned.

Ho

Sent via BlackBerry

Ho Nieh
Chief of Staff
Office of Commissioner William C. Ostendorff
U.S. Nuclear Regulatory Commission
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(b)(6)
(301) 415-1757 (fax)
ho.nieh@nrc.gov

From: Inglesby, Thomas <tinglesby@upmc-biosecurity.org>
To: Nieh, Ho
Cc: Jasen, Maria <mjasen@upmc-biosecurity.org>
Sent: Thu Mar 24 16:15:16 2011
Subject: RE: UPMC meeting invitation

Dear Mr Nieh,

Thank you for the quick response. Commissioner Ostendorff is the only NRC Commissioner that we have invited to speak at our meeting.

We are revising our agenda this afternoon based on recnet responses to our invites. We will get you that agenda by tomorrow that shows those who have been invited and all those who are already confirmed.

We appreciate you considering the invitation.

With best regards
Tom Inglesby

Thomas V. Inglesby, MD
CEO & Director
Center for Biosecurity-UPMC
The Pier IV Building
621 E.Pratt Sreet., Suite 210
Baltimore, MD 21202

Telephone: (443) 573-3329
Fax: (443) 573-3305
tinglesby@upmc-biosecurity.org

000/443

www.upmc-biosecurity.org

From: Nieh, Ho [mailto:Ho.Nieh@nrc.gov]
Sent: Thursday, March 24, 2011 2:32 PM
To: Inglesby, Thomas
Subject: UPMC meeting invitation

Dear Dr. Inglesby,

Thank you for the invitation for Commissioner Ostendorff to speak at your event.

Could you please let me know if other NRC Commissioners have been invited? And, if available, could you send me the agenda and let me know what other speakers have been confirmed?

Many thanks and best regards,

Ho

Ho Nieh
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(b)(6)
(301) 415-1757 (fax)
ho.nieh@nrc.gov

Weaver, Tonna

From: Trapp, James
Sent: Thursday, March 24, 2011 12:35 AM
To: Ruland, William
Subject: FW: Confernence call with DOE 6:00-7:00pm

Chuck Casto and Bruce Boger talked about this - FYI.

From: Scott, Michael
Sent: Thursday, March 24, 2011 12:14 AM
To: Trapp, James
Subject: Fw: Confernence call with DOE 6:00-7:00pm

Sent from my NRC blackberry
Michael Scott
(b)(6)

From: Scott, Michael
To: Monninger, John; Dorman, Dan
Cc: Gibson, Kathy
Sent: Thu Mar 24 00:02:36 2011
Subject: Fw: Confernence call with DOE 6:00-7:00pm

Comrades: Can you shed light on this?

Sent from my NRC blackberry
Michael Scott
(b)(6)

From: Gibson, Kathy
To: Scott, Michael
Cc: Lee, Richard
Sent: Wed Mar 23 22:31:52 2011
Subject: Fw: Confernence call with DOE 6:00-7:00pm

Mike,
See the email below. Can you see if you can find out what this is about? We will follow up here too but it seems to have some connection to what your predecessors are doing or have done over there.

Thanks,
K

From: Lee, Richard
To: Sheron, Brian
Cc: Gibson, Kathy; Elkins, Scott
Sent: Wed Mar 23 19:43:35 2011
Subject: Confernence call with DOE 6:00-7:00pm

000/444

Brian:

A question was asked by Secretary Chu on making DOE information/advice available to TEPCO managing the accident in Japan. If I understood him correctly, he is taking issue with NRC team in Tokyo not conveying DOE provided information to the Japanese counterpart in Tokyo. He asked that whether this issue has been resolved. He said U.S. information provided to Japan are advices and TEPCO is free to take them or ignore them. He sounds upset.

I responded that I will conveyed to our management. I expect, he will ask again tomorrow at the conference call. Please advise me what NRC response is.

Dr. Holdren (Director of the White House Office of Science and Technology Policy) was also on the conference call.

Richard.

Nguyen, Quynh

From: Shoop, Undine
Sent: Thursday, March 24, 2011 1:31 PM
To: Nelson, Robert
Cc: Heck, Jared; Logaras, Harral; Conatser, Richard; Pederson, Cynthia; Reynolds, Steven; Barker, Allan; Westreich, Barry; Markley, Michael; Oesterle, Eric; Meighan, Sean; Nguyen, Quynh
Subject: RE: Action: REMP Reporting Levels and Fukushima

Nelson,

Based on input from OPA, we will be revising the fact sheet.

Undine

From: Nelson, Robert
Sent: Wednesday, March 23, 2011 8:11 AM
To: Shoop, Undine
Cc: Heck, Jared; Logaras, Harral; Conatser, Richard; Pederson, Cynthia; Reynolds, Steven; Barker, Allan; Westreich, Barry; Markley, Michael; Oesterle, Eric; Meighan, Sean; Nguyen, Quynh
Subject: Action: REMP Reporting Levels and Fukushima

See below. Can you take this for action? If so, please keep me advised of your plans to revise it.

Robert A. Nelson
NRR External Communications Coordinator, Japan Events
Deputy Director
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

U.S.NRC
United States Nuclear Regulatory Commission
Protecting People and the Environment

E-mail: robert.nelson@nrc.gov | Office: (301) 415-1453 | Cell (b)(6) | Fax: (301) 415-2102|

From: Barker, Allan
Sent: Tuesday, March 22, 2011 4:36 PM
To: Nelson, Robert
Cc: Heck, Jared; Logaras, Harral; Conatser, Richard; Pederson, Cynthia; Reynolds, Steven
Subject: FW: REMP Reporting Levels and Fukushima

Mr. Nelson,

My name is Allan Barker, the Region III Government Liaison Officer. I wanted to share some thoughts about the communication value that I believe exists for the agency on the regulatory environmental monitoring program that is required of licensees. The following email from Richard Conatser to regional HP branch chiefs clearly identifies a need for awareness during inspections of licensee environmental monitoring programs. In addition, I offer the following link to our public web site for the fact sheet issued in February 2002, on "Environmental Monitoring."

http://www.nrc.gov/reading-rm/doc-collections/fact-sheets/env-monitoring.html

000/445

What's missing in content for the fact sheet is two-fold. First, a perspective on the detection capability of licensee REMP sampling stations for the Fukushima event, and second, the REMP sampling stations are another defense in depth barrier to collect data to protect the health and safety of the public and the environment.

As the Region III Government Liaison Officer, I recommend that the Environmental Monitoring fact sheet be revised so we can continue to communicate a safety message in the near-term from field data that is collected and analyzed across the nation's reactor sites.

Regards,

Allan Barker
Government Liaison Officer
NRC Region III
(630) 829-9660

From: Conatser, Richard
Sent: Monday, March 21, 2011 12:18 PM
To: Werner, Greg; Henderson, Pamela; Dickson, Billy; Bonser, Brian
Cc: Garry, Steven; Pedersen, Roger; Jimenez, Manuel; Clemons-Webb, Candace; Shoop, Undine
Subject: REMP Reporting Levels and Fukushima

All,

You may want to pass this along to your Inspectors who will be on inspections during the next couple of months.

The NRC's REMP REPORTING LEVELs may be exceeded as a result of plumes from Fukushima passing over REMP sampling stations. This email contains some unit conversions for your use. The table below shows the <u>default</u> NRC REPORTING LEVEL for I-131 in REMP samples listed in NUREG-1301 (PWRs) and NUREG-1302 (BWRs). It also converts the REPORTING LEVELS to those units commonly used at the plant sites.

I-131 Reporting Level in NUREG 1301 and NUREG-1302

	I-131	Units	I-131	Units
Drinking Water	2	pCi/L	2E-09	uCi/ml
Non-Drinking Water	20	pCi/L	2E-08	uCi/ml
Air	0.9	pCi/m3	9E-13	uCi/cc

These are default values, and the site-specific values will be in the licensees' ODCMs. The REMP REPORTING LEVELs may be exceeded as a result of plumes from Fukushima passing over REMP sampling stations. The REMP results may vary as various puffs/plumes traverse the US. <u>If</u> a nuclide concentration exceeds the REPORTING LEVES (averaged over a calendar quarter), the licensee may be required to report the data to the NRC within 30 days. The licensee should take the actions listed in their ODCM.

Because the I-131 (and possibly other radionuclides) from Fukushima will elevate the "background," it will reduce the licensee's ability to differentiate releases from their site. Strong data evaluation and analyses are appropriate at all times, and are particularly applicable at this time. This is also a good verification of licensee's analytical detection capabilities.

Best Regards,

Richard L. Conatser
Health Physicist
Nuclear Regulatory Commission
301-415-4039
Richard.Conatser@NRC.gov

Esmaili, Hossein

From: Carlson, Donald
Sent: Thursday, March 24, 2011 5:55 PM
To: Scott, Harold; Esmaili, Hossein; Madni, Imtiaz; Zigh, Ghani; Helton, Donald
Subject: FW: Berkeley NE Dept says Zr can't burn in air or H2O and joins Nils Diaz in saying graphite burns like coal

Forwarding for your reading and viewing pleasure...

FYI -- I had an e-mail exchange from home with Atomic Insights blogger Rod Adams. I was hoping to get him to at least acknowledge the role of Zr-water reactions at TMI when he came up with this bizarre UC-Berkeley-NE news video. Now it's their word against ours. ;-)

Don

From: Carlson, Donald
Sent: Monday, March 21, 2011 11:56 AM
To: Srinivasan, Makuteswara; Ward, Leonard; 'burchelltd@ornl.gov'
Subject: Berkeley NE Dept says Zr can't burn in air or H2O and joins Nils Diaz in saying graphite burns like coal

Srini, Tim, and Len:

As you may have noticed, Rod Adams' stridently pro-nuclear Atomic Insights blog has been getting some attention for criticizing NRC's response to Fukushima Daiichi (see March 17 blog).

But Adams doesn't stop there. He dismisses in-core energetic zirconium-water reactions as a likely source of exploding hydrogen, insists that spent fuel fires are impossible, and even finds support for these views in a very recent local TV news report. The news report features professors at the UC-Berkeley Nuclear Engineering Department claiming that (a) zirconium cannot burn in air or water and (b) graphite is essentially coal (see March 20 blog). With regard to graphite burning like coal, Nils Diaz said the same on CNN last week in reference to Chernobyl.

If Rod Adams and UC-Berkeley are right about zirconium, then this would seem to be a historic new insight worthy of the highest praise. Our understanding of TMI would have to be revised along with many NE textbooks. Or maybe they're wrong. What do you think, Len?

UC-Berkeley's blowtorch demo on zirconium tubing is similar to some of the torch demos on nuclear graphite we've seen where the graphite emerges unscathed. It would be interesting to see such a demo on coal.

My own limited understanding of what happened with the Chernobyl graphite after the explosive core reactivity excursion is as follows:

A considerable amount of graphite does indeed seem to have oxidized or "burned" after the explosion. A former Chernobyl worker (Vladimir Khotylev, since employed by the CNSC in Ottawa) told me several years ago that much of the graphite is no longer there, presumably having been oxidized (to CO or CO2). But Chernobyl was water cooled. Furthermore, given its use of robust zircalloy pressure tubes as well as zircalloy fuel cladding, Chernobyl had much more zirconium than any conventional LWR. So it seems likely that lots of ultra-hot zirconium burned in the air and residual steam after the Chernobyl explosion. The hot zirconium fires then played a significant role in promoting exothermic air oxidation of graphite. Without the energetic zirc-water and zirc-air reactions, it seems likely that much less graphite would have "burned" at Chernobyl.

Similarly for the 1957 Windscale accident, very little graphite would have burned there had it not been for combustion of the metallic fuel elements (and some say secret lithium targets) as a result of Wigner-energy overheating of the air-cooled graphite core.

Graphite "burning" or oxidation is of course being analyzed for postulated severe air-ingress accidents in proposed modular HTGR designs like NGNP and PBMR. With the metal-free all-ceramic cores that define HTGRs, it seems that any comparison of graphite to coal is especially unwarranted.

000/446

What do you think, Srini, Tim, and Len?

Best regards,
Don

Dr.-Ing. Donald E. Carlson
Senior Project Manager
NRO/ARP/ARB1
Office: 301-415-0109
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T6-F6/MS T6-E4

Kauffman, John

From: Kammerer, Annie
Sent: Thursday, March 24, 2011 10:26 PM
To: Hayden, Elizabeth; Hiland, Patrick
Cc: Burnell, Scott; Kauffman, John; Munson, Clifford; Ake, Jon; Bensi, Michelle
Subject: RE: NextEra Energy Questions

Here's a possible response. Perhaps Cliff or Jon can take a look.

1) We are trying to understand why our plants in low-seismic areas (see below) would appear on the list of 27 plants that the NRC intends to review for seismic issues. While the story below notes that these plants have been identified based on " largest increase in seismic risk from a 1980s-era USGS study," the USGS maps show a low probability for seismic activity. I'm not aware of any major changes that would have increased seismic risk... can you help explain?

First, it should be clarified that the list of 27 plants is only provided to show that there is sufficient reason to move the project to the next phase of the generic issue program. These are not the only plants that will be reassessed. Due to the significant uncertainty in the data available, all plants in the central and eastern US will receive the generic letter and will be reassessed. Further, in light of the events in Japan, there is discussion within the NRC of including those in the west as well.

The GI-199 study considers both overall risk and also changes in risk. Both the approach to assessing seismic hazard and the data available to seismologists have improved significantly since the 1980. As a result, estimates of seismic hazard, although still low, have increased since that time. This is the result of a steady improvement in the understanding of seismic hazard over time. It is important to note that it is not the seismic activity, or the seismic hazard itself, that has increased; but rather it is the understanding if it that has changed. (Information on how the USGS seismic hazard maps are developed is available at the USGS website). The larger change in the risk (in terms of core damage frequency) associated with some sites in the study directly reflects the change in assessed hazard.

3) My basic understanding - especially in the case of St. Lucie and Duane Arnold - is that highly conservative values were input into your screening process for plants with low-seismic probability, therefore moving plants like those previously mentioned up in the listing. Can you help me to understand this?

The screening process that was undertaken used data currently available to the NRC, principally from the IPEEE study conducted in the mid-90s. Licensees of nuclear plants in moderate to high seismicity areas tended to provide more detailed information regarding the seismic resistance of the structures, systems, and components than plants in low seismicity areas. Therefore when considering loads beyond the seismic design, NRC staff tended to have more detailed information to rely on for plants in moderate to high seismicity zones; and had to make conservative assumptions for plants in low seismicity regions.

Annie

From: Hayden, Elizabeth
Sent: Thursday, March 24, 2011 5:11 PM
To: Hiland, Patrick
Cc: Burnell, Scott; Kammerer, Annie; Kauffman, John
Subject: FW: NextEra Energy Questions

Pat,

000/447

Can you help me out in answering t least the 2 highlighted questions from FPL? The licensee sounds like this is all a surprise to him.

Beth Hayden

From: Waldron, Michael [mailto:Michael.Waldron@fpl.com]
Sent: Thursday, March 24, 2011 4:03 PM
To: Hayden, Elizabeth
Subject: NextEra Energy Questions

Beth:
Good to speak with you. I will have our licensing folks look for the letter that apparently went out last fall. In the meantime, however, I'm trying to answer a number of questions pertaining to the article below.

1) We are trying to understand why our plants in low-seismic areas (see below) would appear on the list of 27 plants that the NRC intends to review for seismic issues. While the story below notes that these plants have been identified based on " largest increase in seismic risk from a 1980s-era USGS study," the USGS maps show a low probability for seismic activity. I'm not aware of any major changes that would have increased seismic risk... can you help explain?

2) How does the Commission plan to conduct this evaluation? For instance, are you asking us for data, are you running models based on government geologic information? Is there something specific we should be preparing for if, in fact, you are going to do this review?

3) My basic understanding - especially in the case of St. Lucie and Duane Arnold - is that highly conservative values were input into your screening process for plants with low-seismic probability, therefore moving plants like those previously mentioned up in the listing. Can you help me to understand this?

As you can imagine, this list has raised a number of questions for us since geologic maps tend to tell a different story. We're really just trying to figure this out at this point. If you could respond as quickly as possible, I would certainly appreciate it. Thanks again for your help.

Mike

US NRC to check seismic risk of 27 nuke units;
Washington (Platts)--23Mar2011/1033 am EDT/1433 GMT

The US Nuclear Regulatory Commission will conduct a seismic risk assessment of Entergy's Indian Point plant in New York next year, the first of 27 reviews of nuclear power units at 17 plants, agency spokeswoman Beth Hayden said Tuesday.

SepRrately, NRC Chairman Gregory Jaczko "has personally committed to inspect Indian Point," located about 35 miles north of New York City, although "no date has not been determined" for the visit, Hayden said.

The NRC reported these nuclear units will receive the seismic review next year: Indian Point 2, Indian Point 3, Limerick 1, Limerick 2, Peach Bottom 2, Peach Bottom 3, Seabrook, Crystal River 3,,Farley 1, Farley 2, North Anna 1, North Anna 2, Oconee 1, Oconee 2, Oconee 3, St. Lucie 1, St. Lucie 2, Sequoyah 1, Sequoyah 2, Summer, Watts Bar 1, Dresden 2, Dresden 3, Duane Arnold, Perry 1, River Bend and Wolf Creek.

The earthquake risk review is part of a new assessment NRC conducted based on 2008 revised US Survey data of seismic activity in the eastern and central US, said Scott Burnell, an NRC spokesman. The review pre-dated

the earthquake and tsunami that wreaked havoc this month on the Fukushima nuclear stations.

Burnell categorized the findings as a "very broad bush indicator" that is not sufficient to determine the odds for earthquakes at a given nuclear reactor site.

The NRC is planning to send letters to plant operators late this year.

"The expectation is this analysis would show where plants could improve what already is an acceptable response to seismic events," Burnell said. The 27 units selected for review showed the largest increase in seismic risk from a 1980s-era USGS study, he said.

The Indian Point site was selected as the first to be inspected by NRC next year because the revised seismic data showed the largest increase in seismic risk increase from the previous study, Hayden said.

Senator Barbara Boxer, chairman of of the Senate Environment and Public Works Committee and Senator Dianne Feinstein, both Democrats, on March 16 wrote to Jaczko asking that NRC inspect both the Diablo Canyon and San Onofre nuclear units, saying they are concerned that the plants "are near earthquake faults."

New York Governor Andrew Cuomo, a Democrat, urged NRC to shut Indian Point during the past decade when he was the state's attorney general. Cuomo raised concerns about the two-unit plant's proximity to the Ramapo fault and its discharge of heated water into the Hudson River.

"It is essential that the NRC move quickly to answer the significant and long-standing safety questions surrounding Indian Point," Cuomo said in a statement Tuesday.

Entergy said in a statement Tuesday: "All citizens of New York need to have access to the pertinent facts regarding Indian Point. We strongly believe that knowing the facts will answer the public's questions and will also clearly demonstrate that this facility is safe -- designed with a margin of safety beyond the strongest earthquake anticipated in the area. Accordingly, Entergy welcomes Governor Cuomo's call for a review of Indian Point by the federal Nuclear Regulatory Commission and stands ready to assist."

Michael Waldron | Director
Nuclear Communications
Office: 561.694.3618 | **Mobile:** (b)(6)
Email: Michael.Waldron@fpl.com

From: HOO Hoc <HOO.Hoc@nrc.gov>
Sent: Friday, March 25, 2011 1:35 PM
To: LIA07 Hoc; OST01 HOC; OST02 HOC; OST03 HOC
Subject: FW: Radiation data in prefectures by MEXT as of March 25
Attachments: MEXT_Data_by_Mar25-1700.xlsx

From: NITOPS[SMTP:NITOPS@NNSA.DOE.GOV]
Sent: Friday, March 25, 2011 1:34:39 PM
To: CMHT; HOO Hoc; NARAC; PMT01 Hoc; PMT02 Hoc; Hoc, PMT12
Subject: FW: Radiation data in prefectures by MEXT as of March 25
Auto forwarded by a Rule

From: NITOPS
Sent: Friday, March 25, 2011 1:28 PM
To: CMHT; hoo.hoc@nrc.gov; NARAC; pmt01.hoc@nrc.gov; PMT02.Hoc@nrc.gov; pmt12.hoc@nrc.gov
Cc: NITOPS
Subject: FW: Radiation data in prefectures by MEXT as of March 25

Nuclear Incident Team (NIT)
Office of Emergency Response (NA-42)
National Nuclear Security Administration
U.S. Department of Energy
nitops@nnsa.doe.gov
nit@doe.sgov.gov
202-586-8100

From: JapanEmbassy, TaskForce [mailto:JapanEmbassyTaskForce@state.gov]
Sent: Friday, March 25, 2011 1:26 PM
(b)(6)

Subject: Radiation data in prefectures by MEXT as of March 25

Attached is MEXT's radiation data in prefectures as of 17:00 of March 25.
MEXT's original data in the web below in English..

000448

http://www.mext.go.jp/english/radioactivity_level/detail/1304080.htm

Data by prefectures in Graph format:
http://www.mext.go.jp/english/radioactivity_level/detail/1303986.htm

This email is UNCLASSIFIED.

http://www.mext.go.jp/component/a_menu/other/detail/_icsFiles/afieldfile/2011/03/15/1303577_05_1.pd
f

Prefectural level Radiation Monitoring

(μGy/h)

Coc	Date	Period of Readin	Prefecture	Prefecture (City)	Radiatior	Max	Min	Avg
1	3/14	09:00 ~ 17:00	北海道	Hokkaido (Sapporo)		0.034	0.028	0.03
2	3/14	09:00 ~ 17:00	青森県	Aomori (Aomori)		0.022	0.02	0.021
3	3/14	09:00 ~ 17:00	岩手県	Iwate (Morioka)		0.052	0.051	0.052
4	3/14	09:00 ~ 17:00	宮城県	Miyagi (Sendai)				
5	3/14	09:00 ~ 17:00	秋田県	Akita (Akita)		0.036	0.034	0.035
6	3/14	09:00 ~ 17:00	山形県	Yamagata (Yamagata)		0.036	0.035	0.036
7	3/14	09:00 ~ 17:00	福島県	Fukushima (Futaba-gun)				
8	3/14	09:00 ~ 17:00	茨城県	Ibaraki (Mito)				
9	3/14	09:00 ~ 17:00	栃木県	Tochigi (Itsunomiya)		0.039	0.038	0.038
10	3/14	09:00 ~ 17:00	群馬県	Gunma (Maebashi)		0.019	0.018	0.019
11	3/14	09:00 ~ 17:00	埼玉県	Saitama (Saitama)		0.034	0.032	0.033
12	3/14	09:00 ~ 17:00	千葉県	Chiba (Ichihara)		0.023	0.023	0.023
13	3/14	09:00 ~ 17:00	東京都	Tokyo (Shinjuku-ku)		0.037	0.031	0.034
14	3/14	09:00 ~ 17:00	神奈川県	Kanagawa (Chigasaki)		0.037	0.036	0.036
15	3/14	09:00 ~ 17:00	新潟県	Niigata (Niigata)		0.047	0.047	0.047
16	3/14	09:00 ~ 17:00	富山県	Toyama (Imizu)		0.048	0.047	0.048
17	3/14	09:00 ~ 17:00	石川県	Ishikawa (Kanazawa)		0.05	0.044	0.046
18	3/14	09:00 ~ 17:00	福井県	Fukui (Fukui)		0.046	0.044	0.045
19	3/14	09:00 ~ 17:00	山梨県	Yamanashi (Kofu)		0.044	0.042	0.043
20	3/14	09:00 ~ 17:00	長野県	Nagano (Nagano)		0.039	0.037	0.038
21	3/14	09:00 ~ 17:00	岐阜県	Gifu (Kakamigahara)		0.063	0.06	0.061
22	3/14	09:00 ~ 17:00	静岡県	Shizuoka (Shizuoka)		0.038	0.036	0.037
23	3/14	09:00 ~ 17:00	愛知県	Aichi (Nagoya)		0.042	0.039	0.041
24	3/14	09:00 ~ 17:00	三重県	Mie (Yokkaichi)		0.047	0.046	0.047
25	3/14	09:00 ~ 17:00	滋賀県	Shiga (Ohtsu)		0.034	0.033	0.034
26	3/14	09:00 ~ 17:00	京都府	Kyoto (Kyoto)		0.04	0.037	0.038
27	3/14	09:00 ~ 17:00	大阪府	Osaka (Osaka)		0.043	0.042	0.042
28	3/14	09:00 ~ 17:00	兵庫県	Hyogo (Kobe)		0.038	0.036	0.037
29	3/14	09:00 ~ 17:00	奈良県	Nara (Nara)		0.049	0.046	0.048
30	3/14	09:00 ~ 17:00	和歌山県	Wakayama (Wakaya)		0.032	0.031	0.031
31	3/14	09:00 ~ 17:00	鳥取県	Tottori (Touhaku-gun)		0.063	0.063	0.063
32	3/14	09:00 ~ 17:00	島根県	Shimane (Matsue)		0.037	0.036	0.036
33	3/14	09:00 ~ 17:00	岡山県	Okayama (Okayama)		0.051	0.048	0.049
34	3/14	09:00 ~ 17:00	広島県	Hiroshima (Hiroshima)		0.05	0.047	0.049
35	3/14	09:00 ~ 17:00	山口県	Yamaguchi (Yamaguchi)		0.099	0.087	0.092
36	3/14	09:00 ~ 17:00	徳島県	Tokushima (Tokushima)		0.039	0.037	0.038
37	3/14	09:00 ~ 17:00	香川県	Kagawa (Takamatsu)		0.054	0.052	0.053
38	3/14	09:00 ~ 17:00	愛媛県	Ehime (Matsuyama)		0.049	0.046	0.048
39	3/14	09:00 ~ 17:00	高知県	Kochi (Kochi)		0.028	0.021	0.024
40	3/14	09:00 ~ 17:00	福岡県	Fukuoka (Dazaifu)		0.039	0.036	0.037
41	3/14	09:00 ~ 17:00	佐賀県	Saga (Saga)		0.045	0.039	0.041
42	3/14	09:00 ~ 17:00	長崎県	Nagasaki (Ohmura)		0.032	0.029	0.031
43	3/14	09:00 ~ 17:00	熊本県	Kumamoto (Uto)		0.03	0.027	0.028
44	3/14	09:00 ~ 17:00	大分県	Oita (Oita)		0.05	0.05	0.05
45	3/14	09:00 ~ 17:00	宮崎県	Miyazaki (Miyazaki)		0.029	0.026	0.027
46	3/14	09:00 ~ 17:00	鹿児島県	Kagoshima (Kagoshima)		0.035	0.034	0.034
47	3/14	09:00 ~ 17:00	沖縄県	Okinawa (Uruma)		0.024	0.018	0.021
1	3/14	17:00 ~ 09:00	北海道	Hokkaido (Sapporo)		0.039	0.028	0.03
2	3/14	17:00 ~ 09:00	青森県	Aomori (Aomori)		0.022	0.021	0.021
3	3/14	17:00 ~ 09:00	岩手県	Iwate (Morioka)		0.052	0.049	0.051
4	3/14	17:00 ~ 09:00	宮城県	Miyagi (Sendai)				
5	3/14	17:00 ~ 09:00	秋田県	Akita (Akita)		0.036	0.035	0.035
6	3/14	17:00 ~ 09:00	山形県	Yamagata (Yamagata)		0.037	0.036	0.036
7	3/14	17:00 ~ 09:00	福島県	Fukushima (Futaba-gun)				

8	3/14 17:00 ~ 09:00	茨城県	Ibaraki (Mito)			
9	3/14 17:00 ~ 09:00	栃木県	Tochigi (Itsunomiya)	0.864	0.038	0.093
10	3/14 17:00 ~ 09:00	群馬県	Gunma (Maebashi)	0.019	0.018	0.019
11	3/14 17:00 ~ 09:00	埼玉県	Saitama (Saitama)	0.129	0.032	0.052
12	3/14 17:00 ~ 09:00	千葉県	Chiba (Ichihara)	0.074	0.023	0.049
13	3/14 17:00 ~ 09:00	東京都	Tokyo (Shinjuku-ku)	0.147	0.03	0.045
14	3/14 17:00 ~ 09:00	神奈川県	Kanagawa (Chigasaki)	0.086	0.036	0.044
15	3/14 17:00 ~ 09:00	新潟県	Niigata (Niigata)	0.048	0.047	0.048
16	3/14 17:00 ~ 09:00	富山県	Toyama (Imizu)	0.049	0.048	0.049
17	3/14 17:00 ~ 09:00	石川県	Ishikawa (Kanazawa)	0.051	0.044	0.048
18	3/14 17:00 ~ 09:00	福井県	Fukui (Fukui)	0.047	0.045	0.046
19	3/14 17:00 ~ 09:00	山梨県	Yamanashi (Kofu)	0.045	0.042	0.043
20	3/14 17:00 ~ 09:00	長野県	Nagano (Nagano)	0.038	0.036	0.037
21	3/14 17:00 ~ 09:00	岐阜県	Gifu (Kakamigahara)	0.062	0.06	0.061
22	3/14 17:00 ~ 09:00	静岡県	Shizuoka (Shizuoka)	0.036	0.032	0.034
23	3/14 17:00 ~ 09:00	愛知県	Aichi (Nagoya)	0.041	0.039	0.04
24	3/14 17:00 ~ 09:00	三重県	Mie (Yokkaichi)	0.047	0.046	0.046
25	3/14 17:00 ~ 09:00	滋賀県	Shiga (Ohtsu)	0.036	0.033	0.034
26	3/14 17:00 ~ 09:00	京都府	Kyoto (Kyoto)	0.038	0.038	0.038
27	3/14 17:00 ~ 09:00	大阪府	Osaka (Osaka)	0.043	0.042	0.042
28	3/14 17:00 ~ 09:00	兵庫県	Hyogo (Kobe)	0.038	0.037	0.037
29	3/14 17:00 ~ 09:00	奈良県	Nara (Nara)	0.049	0.047	0.048
30	3/14 17:00 ~ 09:00	和歌山県	Wakayama (Wakaya)	0.033	0.031	0.032
31	3/14 17:00 ~ 09:00	鳥取県	Tottori (Touhaku-gun)	0.066	0.063	0.064
32	3/14 17:00 ~ 09:00	島根県	Shimane (Matsue)	0.039	0.037	0.038
33	3/14 17:00 ~ 09:00	岡山県	Okayama (Okayama)	0.05	0.048	0.049
34	3/14 17:00 ~ 09:00	広島県	Hiroshima (Hiroshima)	0.05	0.047	0.049
35	3/14 17:00 ~ 09:00	山口県	Yamaguchi (Yamaguchi)	0.1	0.087	0.093
36	3/14 17:00 ~ 09:00	徳島県	Tokushima (Tokushima)	0.039	0.037	0.038
37	3/14 17:00 ~ 09:00	香川県	Kagawa (Takamatsu)	0.053	0.052	0.052
38	3/14 17:00 ~ 09:00	愛媛県	Ehime (Matsuyama)	0.048	0.047	0.048
39	3/14 17:00 ~ 09:00	高知県	Kochi (Kochi)	0.029	0.022	0.025
40	3/14 17:00 ~ 09:00	福岡県	Fukuoka (Dazaifu)	0.043	0.036	0.038
41	3/14 17:00 ~ 09:00	佐賀県	Saga (Saga)	0.043	0.04	0.041
42	3/14 17:00 ~ 09:00	長崎県	Nagasaki (Ohmura)	0.032	0.029	0.03
43	3/14 17:00 ~ 09:00	熊本県	Kumamoto (Uto)	0.029	0.027	0.027
44	3/14 17:00 ~ 09:00	大分県	Oita (Oita)	0.053	0.05	0.051
45	3/14 17:00 ~ 09:00	宮崎県	Miyazaki (Miyazaki)	0.033	0.026	0.028
46	3/14 17:00 ~ 09:00	鹿児島県	Kagoshima (Kagoshima)	0.037	0.035	0.036
47	3/14 17:00 ~ 09:00	沖縄県	Okinawa (Uruma)	0.026	0.017	0.022
1	3/14 17:00 ~ 09:00	北海道	Hokkaido (Sapporo)	0.034	0.027	0.03
2	3/14 17:00 ~ 09:00	青森県	Aomori (Aomori)	0.021	0.021	0.021
3	3/14 17:00 ~ 09:00	岩手県	Iwate (Morioka)	0.049	0.046	0.047
4	3/14 17:00 ~ 09:00	宮城県	Miyagi (Sendai)			
5	3/14 17:00 ~ 09:00	秋田県	Akita (Akita)	0.035	0.034	0.035
6	3/14 17:00 ~ 09:00	山形県	Yamagata (Yamagata)	0.04	0.036	0.038
7	3/14 17:00 ~ 09:00	福島県	Fukushima (Futaba-gun)			
8	3/14 17:00 ~ 09:00	茨城県	Ibaraki (Mito)			
9	3/14 17:00 ~ 09:00	栃木県	Tochigi (Itsunomiya)	1.318	0.359	0.701
10	3/14 17:00 ~ 09:00	群馬県	Gunma (Maebashi)	0.562	0.019	0.191
11	3/14 17:00 ~ 09:00	埼玉県	Saitama (Saitama)	1.222	0.096	0.328
12	3/14 17:00 ~ 09:00	千葉県	Chiba (Ichihara)	0.313	0.03	0.172
13	3/14 17:00 ~ 09:00	東京都	Tokyo (Shinjuku-ku)	0.809	0.062	0.144
14	3/14 17:00 ~ 09:00	神奈川県	Kanagawa (Chigasaki)	0.182	0.054	0.109
15	3/14 17:00 ~ 09:00	新潟県	Niigata (Niigata)	0.05	0.047	0.049
16	3/14 17:00 ~ 09:00	富山県	Toyama (Imizu)	0.055	0.049	0.05
17	3/14 17:00 ~ 09:00	石川県	Ishikawa (Kanazawa)	0.056	0.043	0.048

18	3/14 17:00 ~ 09:00	福井県	Fukui (Fukui)	0.046	0.046	0.046
19	3/14 17:00 ~ 09:00	山梨県	Yamanashi (Kofu)	0.069	0.043	0.052
20	3/14 17:00 ~ 09:00	長野県	Nagano (Nagano)	0.038	0.037	0.037
21	3/14 17:00 ~ 09:00	岐阜県	Gifu (Kakamigahara)	0.061	0.06	0.061
22	3/14 17:00 ~ 09:00	静岡県	Shizuoka (Shizuoka)	0.089	0.043	0.062
23	3/14 17:00 ~ 09:00	愛知県	Aichi (Nagoya)	0.04	0.039	0.04
24	3/14 17:00 ~ 09:00	三重県	Mie (Yokkaichi)	0.047	0.046	0.046
25	3/14 17:00 ~ 09:00	滋賀県	Shiga (Ohtsu)	0.033	0.033	0.033
26	3/14 17:00 ~ 09:00	京都府	Kyoto (Kyoto)	0.038	0.038	0.038
27	3/14 17:00 ~ 09:00	大阪府	Osaka (Osaka)	0.043	0.042	0.043
28	3/14 17:00 ~ 09:00	兵庫県	Hyogo (Kobe)	0.037	0.037	0.037
29	3/14 17:00 ~ 09:00	奈良県	Nara (Nara)	0.048	0.047	0.047
30	3/14 17:00 ~ 09:00	和歌山県	Wakayama (Wakaya)	0.032	0.031	0.032
31	3/14 17:00 ~ 09:00	鳥取県	Tottori (Touhaku-gun)	0.08	0.064	0.067
32	3/14 17:00 ~ 09:00	島根県	Shimane (Matsue)	0.045	0.037	0.04
33	3/14 17:00 ~ 09:00	岡山県	Okayama (Okayama)	0.049	0.049	0.049
34	3/14 17:00 ~ 09:00	広島県	Hiroshima (Hiroshima)	0.05	0.046	0.048
35	3/14 17:00 ~ 09:00	山口県	Yamaguchi (Yamaguchi)	0.094	0.091	0.092
36	3/14 17:00 ~ 09:00	徳島県	Tokushima (Tokushima)	0.038	0.038	0.038
37	3/14 17:00 ~ 09:00	香川県	Kagawa (Takamatsu)	0.053	0.052	0.052
38	3/14 17:00 ~ 09:00	愛媛県	Ehime (Matsuyama)	0.047	0.047	0.047
39	3/14 17:00 ~ 09:00	高知県	Kochi (Kochi)	0.027	0.022	0.025
40	3/14 17:00 ~ 09:00	福岡県	Fukuoka (Dazaifu)	0.037	0.036	0.036
41	3/14 17:00 ~ 09:00	佐賀県	Saga (Saga)	0.04	0.04	0.04
42	3/14 17:00 ~ 09:00	長崎県	Nagasaki (Ohmura)	0.03	0.029	0.029
43	3/14 17:00 ~ 09:00	熊本県	Kumamoto (Uto)	0.027	0.027	0.027
44	3/14 17:00 ~ 09:00	大分県	Oita (Oita)	0.051	0.049	0.05
45	3/14 17:00 ~ 09:00	宮崎県	Miyazaki (Miyazaki)	0.027	0.026	0.026
46	3/14 17:00 ~ 09:00	鹿児島県	Kagoshima (Kagoshima)	0.035	0.034	0.034
47	3/14 17:00 ~ 09:00	沖縄県	Okinawa (Uruma)	0.024	0.018	0.021
1	3/15 09:00 ~ 17:00	北海道	Hokkaido (Sapporo)	0.034	0.027	0.03
2	3/15 09:00 ~ 17:00	青森県	Aomori (Aomori)	0.021	0.021	0.021
3	3/15 09:00 ~ 17:00	岩手県	Iwate (Morioka)	0.049	0.046	0.047
4	3/15 09:00 ~ 17:00	宮城県	Miyagi (Sendai)			
5	3/15 09:00 ~ 17:00	秋田県	Akita (Akita)	0.035	0.034	0.035
6	3/15 09:00 ~ 17:00	山形県	Yamagata (Yamagata)	0.04	0.036	0.038
7	3/15 09:00 ~ 17:00	福島県	Fukushima (Futaba-gun)			
8	3/15 09:00 ~ 17:00	茨城県	Ibaraki (Mito)			
9	3/15 09:00 ~ 17:00	栃木県	Tochigi (Itsunomiya)	1.318	0.359	0.701
10	3/15 09:00 ~ 17:00	群馬県	Gunma (Maebashi)	0.562	0.019	0.191
11	3/15 09:00 ~ 17:00	埼玉県	Saitama (Saitama)	1.222	0.096	0.328
12	3/15 09:00 ~ 17:00	千葉県	Chiba (Ichihara)	0.313	0.03	0.172
13	3/15 09:00 ~ 17:00	東京都	Tokyo (Shinjuku-ku)	0.809	0.062	0.144
14	3/15 09:00 ~ 17:00	神奈川県	Kanagawa (Chigasaki)	0.182	0.054	0.109
15	3/15 09:00 ~ 17:00	新潟県	Niigata (Niigata)	0.05	0.047	0.049
16	3/15 09:00 ~ 17:00	富山県	Toyama (Imizu)	0.055	0.049	0.05
17	3/15 09:00 ~ 17:00	石川県	Ishikawa (Kanazawa)	0.056	0.043	0.048
18	3/15 09:00 ~ 17:00	福井県	Fukui (Fukui)	0.046	0.046	0.046
19	3/15 09:00 ~ 17:00	山梨県	Yamanashi (Kofu)	0.069	0.043	0.052
20	3/15 09:00 ~ 17:00	長野県	Nagano (Nagano)	0.038	0.037	0.037
21	3/15 09:00 ~ 17:00	岐阜県	Gifu (Kakamigahara)	0.061	0.06	0.061
22	3/15 09:00 ~ 17:00	静岡県	Shizuoka (Shizuoka)	0.089	0.043	0.062
23	3/15 09:00 ~ 17:00	愛知県	Aichi (Nagoya)	0.04	0.039	0.04
24	3/15 09:00 ~ 17:00	三重県	Mie (Yokkaichi)	0.047	0.046	0.046
25	3/15 09:00 ~ 17:00	滋賀県	Shiga (Ohtsu)	0.033	0.033	0.033
26	3/15 09:00 ~ 17:00	京都府	Kyoto (Kyoto)	0.038	0.038	0.038
27	3/15 09:00 ~ 17:00	大阪府	Osaka (Osaka)	0.043	0.042	0.043

28	3/15 09:00 ~ 17:00	兵庫県	Hyogo (Kobe)	0.037	0.037	0.037
29	3/15 09:00 ~ 17:00	奈良県	Nara (Nara)	0.048	0.047	0.047
30	3/15 09:00 ~ 17:00	和歌山県	Wakayama (Wakaya)	0.032	0.031	0.032
31	3/15 09:00 ~ 17:00	鳥取県	Tottori (Touhaku-gun)	0.08	0.064	0.067
32	3/15 09:00 ~ 17:00	島根県	Shimane (Matsue)	0.045	0.037	0.04
33	3/15 09:00 ~ 17:00	岡山県	Okayama (Okayama)	0.049	0.049	0.049
34	3/15 09:00 ~ 17:00	広島県	Hiroshima (Hiroshima)	0.05	0.046	0.048
35	3/15 09:00 ~ 17:00	山口県	Yamaguchi (Yamaguchi)	0.094	0.091	0.092
36	3/15 09:00 ~ 17:00	徳島県	Tokushima (Tokushima)	0.038	0.038	0.038
37	3/15 09:00 ~ 17:00	香川県	Kagawa (Takamatsu)	0.053	0.052	0.052
38	3/15 09:00 ~ 17:00	愛媛県	Ehime (Matsuyama)	0.047	0.047	0.047
39	3/15 09:00 ~ 17:00	高知県	Kochi (Kochi)	0.027	0.022	0.025
40	3/15 09:00 ~ 17:00	福岡県	Fukuoka (Dazaifu)	0.037	0.036	0.036
41	3/15 09:00 ~ 17:00	佐賀県	Saga (Saga)	0.04	0.04	0.04
42	3/15 09:00 ~ 17:00	長崎県	Nagasaki (Ohmura)	0.03	0.029	0.029
43	3/15 09:00 ~ 17:00	熊本県	Kumamoto (Uto)	0.027	0.027	0.027
44	3/15 09:00 ~ 17:00	大分県	Oita (Oita)	0.051	0.049	0.05
45	3/15 09:00 ~ 17:00	宮崎県	Miyazaki (Miyazaki)	0.027	0.026	0.026
46	3/15 09:00 ~ 17:00	鹿児島県	Kagoshima (Kagoshima)	0.035	0.034	0.034
47	3/15 09:00 ~ 17:00	沖縄県	Okinawa (Uruma)	0.024	0.018	0.021

1	3/15 17:00 ~ 18:00	北海道	Hokkaido (Sapporo)	0.028
2	3/15 17:00 ~ 18:00	青森県	Aomori (Aomori)	0.021
3	3/15 17:00 ~ 18:00	岩手県	Iwate (Morioka)	0.045
4	3/15 17:00 ~ 18:00	宮城県	Miyagi (Sendai)	0.083
5	3/15 17:00 ~ 18:00	秋田県	Akita (Akita)	0.0355
6	3/15 17:00 ~ 18:00	山形県	Yamagata (Yamaga	0.04
7	3/15 17:00 ~ 18:00	福島県	Fukushima (Futaba-gun)	
8	3/15 17:00 ~ 18:00	茨城県	Ibaraki (Mito)	0.28
9	3/15 17:00 ~ 18:00	栃木県	Tochigi (Itsunomiya	0.388
10	3/15 17:00 ~ 18:00	群馬県	Gunma (Maebashi)	
11	3/15 17:00 ~ 18:00	埼玉県	Saitama (Saitama)	1.039
12	3/15 17:00 ~ 18:00	千葉県	Chiba (Ichihara)	0.253
13	3/15 17:00 ~ 18:00	東京都	Tokyo (Shinjuku-ku	0.0941
14	3/15 17:00 ~ 18:00	神奈川県	Kanagawa (Chigasa	0.061
15	3/15 17:00 ~ 18:00	新潟県	Niigata (Niigata)	0.05
16	3/15 17:00 ~ 18:00	富山県	Toyama (Imizu)	0.063
17	3/15 17:00 ~ 18:00	石川県	Ishikawa (Kanazawa	0.0542
18	3/15 17:00 ~ 18:00	福井県	Fukui (Fukui)	0.052
19	3/15 17:00 ~ 18:00	山梨県	Yamanashi (Kofu)	0.053
20	3/15 17:00 ~ 18:00	長野県	Nagano (Nagano)	0.04
21	3/15 17:00 ~ 18:00	岐阜県	Gifu (Kakamigahara	0.061
22	3/15 17:00 ~ 18:00	静岡県	Shizuoka (Shizuoka	0.0536
23	3/15 17:00 ~ 18:00	愛知県	Aichi (Nagoya)	0.04
24	3/15 17:00 ~ 18:00	三重県	Mie (Yokkaichi)	0.046
25	3/15 17:00 ~ 18:00	滋賀県	Shiga (Ohtsu)	0.033
26	3/15 17:00 ~ 18:00	京都府	Kyoto (Kyoto)	0.0378
27	3/15 17:00 ~ 18:00	大阪府	Osaka (Osaka)	0.042
28	3/15 17:00 ~ 18:00	兵庫県	Hyogo (Kobe)	0.037
29	3/15 17:00 ~ 18:00	奈良県	Nara (Nara)	0.047
30	3/15 17:00 ~ 18:00	和歌山県	Wakayama (Wakaya	0.032
31	3/15 17:00 ~ 18:00	鳥取県	Tottori (Touhaku-g	0.074
32	3/15 17:00 ~ 18:00	島根県	Shimane (Matsue)	0.044
33	3/15 17:00 ~ 18:00	岡山県	Okayama (Okayama	0.049
34	3/15 17:00 ~ 18:00	広島県	Hiroshima (Hiroshin	0.047
35	3/15 17:00 ~ 18:00	山口県	Yamaguchi (Yamagu	0.092
36	3/15 17:00 ~ 18:00	徳島県	Tokushima (Tokush	0.038
37	3/15 17:00 ~ 18:00	香川県	Kagawa (Takamatsu	0.052

38	3/15 17:00 ~ 18:00	愛媛県	Ehime (Matsuyama)	0.0473
39	3/15 17:00 ~ 18:00	高知県	Kochi (Kochi)	0.0246
40	3/15 17:00 ~ 18:00	福岡県	Fukuoka (Dazaifu)	0.036
41	3/15 17:00 ~ 18:00	佐賀県	Saga (Saga)	0.04
42	3/15 17:00 ~ 18:00	長崎県	Nagasaki (Ohmura)	0.029
43	3/15 17:00 ~ 18:00	熊本県	Kumamoto (Uto)	0.027
44	3/15 17:00 ~ 18:00	大分県	Oita (Oita)	0.05
45	3/15 17:00 ~ 18:00	宮崎県	Miyazaki (Miyazaki)	0.0263
46	3/15 17:00 ~ 18:00	鹿児島県	Kagoshima (Kagosh	0.0345
47	3/15 17:00 ~ 18:00	沖縄県	Okinawa (Uruma)	0.0213
1	3/15 18:00 ~ 19:00	北海道	Hokkaido (Sapporo)	0.028
2	3/15 18:00 ~ 19:00	青森県	Aomori (Aomori)	0.022
3	3/15 18:00 ~ 19:00	岩手県	Iwate (Morioka)	0.042
4	3/15 18:00 ~ 19:00	宮城県	Miyagi (Sendai)	0.1127
5	3/15 18:00 ~ 19:00	秋田県	Akita (Akita)	0.0364
6	3/15 18:00 ~ 19:00	山形県	Yamagata (Yamaga	0.043
7	3/15 18:00 ~ 19:00	福島県	Fukushima (Futaba-gun)	
8	3/15 18:00 ~ 19:00	茨城県	Ibaraki (Mito)	0.253
9	3/15 18:00 ~ 19:00	栃木県	Tochigi (Itsunomiya	0.375
10	3/15 18:00 ~ 19:00	群馬県	Gunma (Maebashi)	
11	3/15 18:00 ~ 19:00	埼玉県	Saitama (Saitama)	0.986
12	3/15 18:00 ~ 19:00	千葉県	Chiba (Ichihara)	0.103
13	3/15 18:00 ~ 19:00	東京都	Tokyo (Shinjuku-ku	0.2
14	3/15 18:00 ~ 19:00	神奈川県	Kanagawa (Chigasa	0.061
15	3/15 18:00 ~ 19:00	新潟県	Niigata (Niigata)	0.051
16	3/15 18:00 ~ 19:00	富山県	Toyama (Imizu)	0.063
17	3/15 18:00 ~ 19:00	石川県	Ishikawa (Kanazawa	0.0593
18	3/15 18:00 ~ 19:00	福井県	Fukui (Fukui)	0.053
19	3/15 18:00 ~ 19:00	山梨県	Yamanashi (Kofu)	0.051
20	3/15 18:00 ~ 19:00	長野県	Nagano (Nagano)	0.0414
21	3/15 18:00 ~ 19:00	岐阜県	Gifu (Kakamigahara	0.061
22	3/15 18:00 ~ 19:00	静岡県	Shizuoka (Shizuoka	0.0525
23	3/15 18:00 ~ 19:00	愛知県	Aichi (Nagoya)	0.039
24	3/15 18:00 ~ 19:00	三重県	Mie (Yokkaichi)	0.0459
25	3/15 18:00 ~ 19:00	滋賀県	Shiga (Ohtsu)	0.033
26	3/15 18:00 ~ 19:00	京都府	Kyoto (Kyoto)	0.0379
27	3/15 18:00 ~ 19:00	大阪府	Osaka (Osaka)	0.043
28	3/15 18:00 ~ 19:00	兵庫県	Hyogo (Kobe)	0.037
29	3/15 18:00 ~ 19:00	奈良県	Nara (Nara)	0.048
30	3/15 18:00 ~ 19:00	和歌山県	Wakayama (Wakaya	0.032
31	3/15 18:00 ~ 19:00	鳥取県	Tottori (Touhaku-g	0.067
32	3/15 18:00 ~ 19:00	島根県	Shimane (Matsue)	0.043
33	3/15 18:00 ~ 19:00	岡山県	Okayama (Okayama	0.052
34	3/15 18:00 ~ 19:00	広島県	Hiroshima (Hiroshin	0.047
35	3/15 18:00 ~ 19:00	山口県	Yamaguchi (Yamagu	0.092
36	3/15 18:00 ~ 19:00	徳島県	Tokushima (Tokush	0.038
37	3/15 18:00 ~ 19:00	香川県	Kagawa (Takamatsu	0.052
38	3/15 18:00 ~ 19:00	愛媛県	Ehime (Matsuyama)	0.0478
39	3/15 18:00 ~ 19:00	高知県	Kochi (Kochi)	0.0245
40	3/15 18:00 ~ 19:00	福岡県	Fukuoka (Dazaifu)	0.036
41	3/15 18:00 ~ 19:00	佐賀県	Saga (Saga)	0.04
42	3/15 18:00 ~ 19:00	長崎県	Nagasaki (Ohmura)	0.029
43	3/15 18:00 ~ 19:00	熊本県	Kumamoto (Uto)	0.027
44	3/15 18:00 ~ 19:00	大分県	Oita (Oita)	0.05
45	3/15 18:00 ~ 19:00	宮崎県	Miyazaki (Miyazaki)	0.0265
46	3/15 18:00 ~ 19:00	鹿児島県	Kagoshima (Kagosh	0.0346
47	3/15 18:00 ~ 19:00	沖縄県	Okinawa (Uruma)	0.0213

1	3/15 18:00 ~ 19:00	北海道	Hokkaido (Sapporo)	0.028
2	3/15 18:00 ~ 19:00	青森県	Aomori (Aomori)	0.023
3	3/15 18:00 ~ 19:00	岩手県	Iwate (Morioka)	0.04
4	3/15 18:00 ~ 19:00	宮城県	Miyagi (Sendai)	0.1799
5	3/15 18:00 ~ 19:00	秋田県	Akita (Akita)	0.0361
6	3/15 18:00 ~ 19:00	山形県	Yamagata (Yamaga	0.051
7	3/15 18:00 ~ 19:00	福島県	Fukushima (Futaba-gun)	
8	3/15 18:00 ~ 19:00	茨城県	Ibaraki (Mito)	0.239
9	3/15 18:00 ~ 19:00	栃木県	Tochigi (Itsunomiya	0.321
10	3/15 18:00 ~ 19:00	群馬県	Gunma (Maebashi)	0.389
11	3/15 18:00 ~ 19:00	埼玉県	Saitama (Saitama)	0.169
12	3/15 18:00 ~ 19:00	千葉県	Chiba (Ichihara)	0.055
13	3/15 18:00 ~ 19:00	東京都	Tokyo (Shinjuku-ku	0.361
14	3/15 18:00 ~ 19:00	神奈川県	Kanagawa (Chigasa	0.062
15	3/15 18:00 ~ 19:00	新潟県	Niigata (Niigata)	0.052
16	3/15 18:00 ~ 19:00	富山県	Toyama (Imizu)	0.062
17	3/15 18:00 ~ 19:00	石川県	Ishikawa (Kanazawa	0.0662
18	3/15 18:00 ~ 19:00	福井県	Fukui (Fukui)	0.053
19	3/15 18:00 ~ 19:00	山梨県	Yamanashi (Kofu)	0.05
20	3/15 18:00 ~ 19:00	長野県	Nagano (Nagano)	0.0431
21	3/15 18:00 ~ 19:00	岐阜県	Gifu (Kakamigahara	0.061
22	3/15 18:00 ~ 19:00	静岡県	Shizuoka (Shizuoka	0.0513
23	3/15 18:00 ~ 19:00	愛知県	Aichi (Nagoya)	0.039
24	3/15 18:00 ~ 19:00	三重県	Mie (Yokkaichi)	0.0463
25	3/15 18:00 ~ 19:00	滋賀県	Shiga (Ohtsu)	0.033
26	3/15 18:00 ~ 19:00	京都府	Kyoto (Kyoto)	0.0379
27	3/15 18:00 ~ 19:00	大阪府	Osaka (Osaka)	0.043
28	3/15 18:00 ~ 19:00	兵庫県	Hyogo (Kobe)	0.038
29	3/15 18:00 ~ 19:00	奈良県	Nara (Nara)	0.048
30	3/15 18:00 ~ 19:00	和歌山県	Wakayama (Wakaya	0.032
31	3/15 18:00 ~ 19:00	鳥取県	Tottori (Touhaku-g	0.065
32	3/15 18:00 ~ 19:00	島根県	Shimane (Matsue)	0.039
33	3/15 18:00 ~ 19:00	岡山県	Okayama (Okayama	0.055
34	3/15 18:00 ~ 19:00	広島県	Hiroshima (Hiroshin	0.046
35	3/15 18:00 ~ 19:00	山口県	Yamaguchi (Yamagı	0.092
36	3/15 18:00 ~ 19:00	徳島県	Tokushima (Tokush	0.038
37	3/15 18:00 ~ 19:00	香川県	Kagawa (Takamatsı	0.052
38	3/15 18:00 ~ 19:00	愛媛県	Ehime (Matsuyama)	0.0479
39	3/15 18:00 ~ 19:00	高知県	Kochi (Kochi)	0.0246
40	3/15 18:00 ~ 19:00	福岡県	Fukuoka (Dazaifu)	0.036
41	3/15 18:00 ~ 19:00	佐賀県	Saga (Saga)	0.04
42	3/15 18:00 ~ 19:00	長崎県	Nagasaki (Ohmura)	0.029
43	3/15 18:00 ~ 19:00	熊本県	Kumamoto (Uto)	0.027
44	3/15 18:00 ~ 19:00	大分県	Oita (Oita)	0.049
45	3/15 18:00 ~ 19:00	宮崎県	Miyazaki (Miyazaki)	0.0266
46	3/15 18:00 ~ 19:00	鹿児島県	Kagoshima (Kagosh	0.0344
47	3/15 18:00 ~ 19:00	沖縄県	Okinawa (Uruma)	0.0213
1	3/15 19:00 ~ 20:00	北海道	Hokkaido (Sapporo)	0.028
2	3/15 19:00 ~ 20:00	青森県	Aomori (Aomori)	0.023
3	3/15 19:00 ~ 20:00	岩手県	Iwate (Morioka)	0.04
4	3/15 19:00 ~ 20:00	宮城県	Miyagi (Sendai)	0.1799
5	3/15 19:00 ~ 20:00	秋田県	Akita (Akita)	0.0361
6	3/15 19:00 ~ 20:00	山形県	Yamagata (Yamaga	0.051
7	3/15 19:00 ~ 20:00	福島県	Fukushima (Futaba-gun)	
8	3/15 19:00 ~ 20:00	茨城県	Ibaraki (Mito)	0.239
9	3/15 19:00 ~ 20:00	栃木県	Tochigi (Itsunomiya	0.321
10	3/15 19:00 ~ 20:00	群馬県	Gunma (Maebashi)	0.389

11	3/15 19:00 ~ 20:00	埼玉県	Saitama (Saitama)	0.169
12	3/15 19:00 ~ 20:00	千葉県	Chiba (Ichihara)	0.055
13	3/15 19:00 ~ 20:00	東京都	Tokyo (Shinjuku-ku	0.361
14	3/15 19:00 ~ 20:00	神奈川県	Kanagawa (Chigasa	0.062
15	3/15 19:00 ~ 20:00	新潟県	Niigata (Niigata)	0.052
16	3/15 19:00 ~ 20:00	富山県	Toyama (Imizu)	0.062
17	3/15 19:00 ~ 20:00	石川県	Ishikawa (Kanazawa	0.0662
18	3/15 19:00 ~ 20:00	福井県	Fukui (Fukui)	0.053
19	3/15 19:00 ~ 20:00	山梨県	Yamanashi (Kofu)	0.05
20	3/15 19:00 ~ 20:00	長野県	Nagano (Nagano)	0.0431
21	3/15 19:00 ~ 20:00	岐阜県	Gifu (Kakamigahara	0.061
22	3/15 19:00 ~ 20:00	静岡県	Shizuoka (Shizuoka	0.0513
23	3/15 19:00 ~ 20:00	愛知県	Aichi (Nagoya)	0.039
24	3/15 19:00 ~ 20:00	三重県	Mie (Yokkaichi)	0.0463
25	3/15 19:00 ~ 20:00	滋賀県	Shiga (Ohtsu)	0.033
26	3/15 19:00 ~ 20:00	京都府	Kyoto (Kyoto)	0.0379
27	3/15 19:00 ~ 20:00	大阪府	Osaka (Osaka)	0.043
28	3/15 19:00 ~ 20:00	兵庫県	Hyogo (Kobe)	0.038
29	3/15 19:00 ~ 20:00	奈良県	Nara (Nara)	0.048
30	3/15 19:00 ~ 20:00	和歌山県	Wakayama (Wakaya	0.032
31	3/15 19:00 ~ 20:00	鳥取県	Tottori (Touhaku-g	0.065
32	3/15 19:00 ~ 20:00	島根県	Shimane (Matsue)	0.039
33	3/15 19:00 ~ 20:00	岡山県	Okayama (Okayama	0.055
34	3/15 19:00 ~ 20:00	広島県	Hiroshima (Hiroshin	0.046
35	3/15 19:00 ~ 20:00	山口県	Yamaguchi (Yamagı	0.092
36	3/15 19:00 ~ 20:00	徳島県	Tokushima (Tokush	0.038
37	3/15 19:00 ~ 20:00	香川県	Kagawa (Takamatsı	0.052
38	3/15 19:00 ~ 20:00	愛媛県	Ehime (Matsuyama)	0.0479
39	3/15 19:00 ~ 20:00	高知県	Kochi (Kochi)	0.0246
40	3/15 19:00 ~ 20:00	福岡県	Fukuoka (Dazaifu)	0.036
41	3/15 19:00 ~ 20:00	佐賀県	Saga (Saga)	0.04
42	3/15 19:00 ~ 20:00	長崎県	Nagasaki (Ohmura)	0.029
43	3/15 19:00 ~ 20:00	熊本県	Kumamoto (Uto)	0.027
44	3/15 19:00 ~ 20:00	大分県	Oita (Oita)	0.049
45	3/15 19:00 ~ 20:00	宮崎県	Miyazaki (Miyazaki)	0.0266
46	3/15 19:00 ~ 20:00	鹿児島県	Kagoshima (Kagosh	0.0344
47	3/15 19:00 ~ 20:00	沖縄県	Okinawa (Uruma)	0.0213
1	3/15 20:00 ~ 21:00	北海道	Hokkaido (Sapporo)	0.028
2	3/15 20:00 ~ 21:00	青森県	Aomori (Aomori)	0.024
3	3/15 20:00 ~ 21:00	岩手県	Iwate (Morioka)	0.043
4	3/15 20:00 ~ 21:00	宮城県	Miyagi (Sendai)	0.1989
5	3/15 20:00 ~ 21:00	秋田県	Akita (Akita)	0.0367
6	3/15 20:00 ~ 21:00	山形県	Yamagata (Yamaga	0.062
7	3/15 20:00 ~ 21:00	福島県	Fukushima (Futaba-gun)	
8	3/15 20:00 ~ 21:00	茨城県	Ibaraki (Mito)	0.229
9	3/15 20:00 ~ 21:00	栃木県	Tochigi (Itsunomiya	0.305
10	3/15 20:00 ~ 21:00	群馬県	Gunma (Maebashi)	0.406
11	3/15 20:00 ~ 21:00	埼玉県	Saitama (Saitama)	0.111
12	3/15 20:00 ~ 21:00	千葉県	Chiba (Ichihara)	0.039
13	3/15 20:00 ~ 21:00	東京都	Tokyo (Shinjuku-ku	0.123
14	3/15 20:00 ~ 21:00	神奈川県	Kanagawa (Chigasa	0.069
15	3/15 20:00 ~ 21:00	新潟県	Niigata (Niigata)	0.055
16	3/15 20:00 ~ 21:00	富山県	Toyama (Imizu)	0.067
17	3/15 20:00 ~ 21:00	石川県	Ishikawa (Kanazawa	0.0674
18	3/15 20:00 ~ 21:00	福井県	Fukui (Fukui)	0.056
19	3/15 20:00 ~ 21:00	山梨県	Yamanashi (Kofu)	0.05
20	3/15 20:00 ~ 21:00	長野県	Nagano (Nagano)	0.0606

21	3/15 20:00 ~ 21:00	岐阜県	Gifu (Kakamigahara	0.062
22	3/15 20:00 ~ 21:00	静岡県	Shizuoka (Shizuoka	0.0498
23	3/15 20:00 ~ 21:00	愛知県	Aichi (Nagoya)	0.04
24	3/15 20:00 ~ 21:00	三重県	Mie (Yokkaichi)	0.0465
25	3/15 20:00 ~ 21:00	滋賀県	Shiga (Ohtsu)	0.038
26	3/15 20:00 ~ 21:00	京都府	Kyoto (Kyoto)	0.0391
27	3/15 20:00 ~ 21:00	大阪府	Osaka (Osaka)	0.043
28	3/15 20:00 ~ 21:00	兵庫県	Hyogo (Kobe)	0.04
29	3/15 20:00 ~ 21:00	奈良県	Nara (Nara)	0.048
30	3/15 20:00 ~ 21:00	和歌山県	Wakayama (Wakaya	0.032
31	3/15 20:00 ~ 21:00	鳥取県	Tottori (Touhaku-g	0.064
32	3/15 20:00 ~ 21:00	島根県	Shimane (Matsue)	0.038
33	3/15 20:00 ~ 21:00	岡山県	Okayama (Okayama	0.051
34	3/15 20:00 ~ 21:00	広島県	Hiroshima (Hiroshin	0.047
35	3/15 20:00 ~ 21:00	山口県	Yamaguchi (Yamagu	0.092
36	3/15 20:00 ~ 21:00	徳島県	Tokushima (Tokush	0.038
37	3/15 20:00 ~ 21:00	香川県	Kagawa (Takamatsu	0.054
38	3/15 20:00 ~ 21:00	愛媛県	Ehime (Matsuyama)	0.048
39	3/15 20:00 ~ 21:00	高知県	Kochi (Kochi)	0.0246
40	3/15 20:00 ~ 21:00	福岡県	Fukuoka (Dazaifu)	0.036
41	3/15 20:00 ~ 21:00	佐賀県	Saga (Saga)	0.04
42	3/15 20:00 ~ 21:00	長崎県	Nagasaki (Ohmura)	0.029
43	3/15 20:00 ~ 21:00	熊本県	Kumamoto (Uto)	0.027
44	3/15 20:00 ~ 21:00	大分県	Oita (Oita)	0.049
45	3/15 20:00 ~ 21:00	宮崎県	Miyazaki (Miyazaki)	0.0265
46	3/15 20:00 ~ 21:00	鹿児島県	Kagoshima (Kagosh	0.0344
47	3/15 20:00 ~ 21:00	沖縄県	Okinawa (Uruma)	0.0211
1	3/15 21:00 ~ 22:00	北海道	Hokkaido (Sapporo)	0.027
2	3/15 21:00 ~ 22:00	青森県	Aomori (Aomori)	0.024
3	3/15 21:00 ~ 22:00	岩手県	Iwate (Morioka)	0.043
4	3/15 21:00 ~ 22:00	宮城県	Miyagi (Sendai)	0.1836
5	3/15 21:00 ~ 22:00	秋田県	Akita (Akita)	0.0368
6	3/15 21:00 ~ 22:00	山形県	Yamagata (Yamaga	0.073
7	3/15 21:00 ~ 22:00	福島県	Fukushima (Futaba-gun)	
8	3/15 21:00 ~ 22:00	茨城県	Ibaraki (Mito)	0.223
9	3/15 21:00 ~ 22:00	栃木県	Tochigi (Itsunomiya	0.293
10	3/15 21:00 ~ 22:00	群馬県	Gunma (Maebashi)	0.398
11	3/15 21:00 ~ 22:00	埼玉県	Saitama (Saitama)	0.076
12	3/15 21:00 ~ 22:00	千葉県	Chiba (Ichihara)	0.034
13	3/15 21:00 ~ 22:00	東京都	Tokyo (Shinjuku-ku	0.0888
14	3/15 21:00 ~ 22:00	神奈川県	Kanagawa (Chigasa	0.074
15	3/15 21:00 ~ 22:00	新潟県	Niigata (Niigata)	0.055
16	3/15 21:00 ~ 22:00	富山県	Toyama (Imizu)	0.065
17	3/15 21:00 ~ 22:00	石川県	Ishikawa (Kanazawa	0.0643
18	3/15 21:00 ~ 22:00	福井県	Fukui (Fukui)	0.059
19	3/15 21:00 ~ 22:00	山梨県	Yamanashi (Kofu)	0.05
20	3/15 21:00 ~ 22:00	長野県	Nagano (Nagano)	0.0939
21	3/15 21:00 ~ 22:00	岐阜県	Gifu (Kakamigahara	0.061
22	3/15 21:00 ~ 22:00	静岡県	Shizuoka (Shizuoka	0.0476
23	3/15 21:00 ~ 22:00	愛知県	Aichi (Nagoya)	0.04
24	3/15 21:00 ~ 22:00	三重県	Mie (Yokkaichi)	0.0477
25	3/15 21:00 ~ 22:00	滋賀県	Shiga (Ohtsu)	0.046
26	3/15 21:00 ~ 22:00	京都府	Kyoto (Kyoto)	0.0442
27	3/15 21:00 ~ 22:00	大阪府	Osaka (Osaka)	0.044
28	3/15 21:00 ~ 22:00	兵庫県	Hyogo (Kobe)	0.044
29	3/15 21:00 ~ 22:00	奈良県	Nara (Nara)	0.049
30	3/15 21:00 ~ 22:00	和歌山県	Wakayama (Wakaya	0.032

31	3/15 21:00 ~ 22:00	鳥取県	Tottori (Touhaku-g	0.064
32	3/15 21:00 ~ 22:00	島根県	Shimane (Matsue)	0.038
33	3/15 21:00 ~ 22:00	岡山県	Okayama (Okayama	0.049
34	3/15 21:00 ~ 22:00	広島県	Hiroshima (Hiroshin	0.047
35	3/15 21:00 ~ 22:00	山口県	Yamaguchi (Yamag	0.092
36	3/15 21:00 ~ 22:00	徳島県	Tokushima (Tokush	0.038
37	3/15 21:00 ~ 22:00	香川県	Kagawa (Takamatsı	0.059
38	3/15 21:00 ~ 22:00	愛媛県	Ehime (Matsuyama	0.0478
39	3/15 21:00 ~ 22:00	高知県	Kochi (Kochi)	0.0248
40	3/15 21:00 ~ 22:00	福岡県	Fukuoka (Dazaifu)	0.036
41	3/15 21:00 ~ 22:00	佐賀県	Saga (Saga)	0.04
42	3/15 21:00 ~ 22:00	長崎県	Nagasaki (Ohmura)	0.029
43	3/15 21:00 ~ 22:00	熊本県	Kumamoto (Uto)	0.027
44	3/15 21:00 ~ 22:00	大分県	Oita (Oita)	0.05
45	3/15 21:00 ~ 22:00	宮崎県	Miyazaki (Miyazaki)	0.0263
46	3/15 21:00 ~ 22:00	鹿児島県	Kagoshima (Kagosh	0.0346
47	3/15 21:00 ~ 22:00	沖縄県	Okinawa (Uruma)	0.0208
1	3/15 22:00 ~ 23:00	北海道	Hokkaido (Sapporo	0.028
2	3/15 22:00 ~ 23:00	青森県	Aomori (Aomori)	0.025
3	3/15 22:00 ~ 23:00	岩手県	Iwate (Morioka)	0.04
4	3/15 22:00 ~ 23:00	宮城県	Miyagi (Sendai)	0.1786
5	3/15 22:00 ~ 23:00	秋田県	Akita (Akita)	0.0373
6	3/15 22:00 ~ 23:00	山形県	Yamagata (Yamaga	0.099
7	3/15 22:00 ~ 23:00	福島県	Fukushima (Futaba-gun)	
8	3/15 22:00 ~ 23:00	茨城県	Ibaraki (Mito)	0.218
9	3/15 22:00 ~ 23:00	栃木県	Tochigi (Itsunomiya	0.272
10	3/15 22:00 ~ 23:00	群馬県	Gunma (Maebashi)	0.358
11	3/15 22:00 ~ 23:00	埼玉県	Saitama (Saitama)	0.068
12	3/15 22:00 ~ 23:00	千葉県	Chiba (Ichihara)	0.034
13	3/15 22:00 ~ 23:00	東京都	Tokyo (Shinjuku-ku	0.0657
14	3/15 22:00 ~ 23:00	神奈川県	Kanagawa (Chigasa	0.07
15	3/15 22:00 ~ 23:00	新潟県	Niigata (Niigata)	0.058
16	3/15 22:00 ~ 23:00	富山県	Toyama (Imizu)	0.062
17	3/15 22:00 ~ 23:00	石川県	Ishikawa (Kanazawa	0.0679
18	3/15 22:00 ~ 23:00	福井県	Fukui (Fukui)	0.059
19	3/15 22:00 ~ 23:00	山梨県	Yamanashi (Kofu)	0.049
20	3/15 22:00 ~ 23:00	長野県	Nagano (Nagano)	0.107
21	3/15 22:00 ~ 23:00	岐阜県	Gifu (Kakamigahara	0.061
22	3/15 22:00 ~ 23:00	静岡県	Shizuoka (Shizuoka	0.0469
23	3/15 22:00 ~ 23:00	愛知県	Aichi (Nagoya)	0.04
24	3/15 22:00 ~ 23:00	三重県	Mie (Yokkaichi)	0.0491
25	3/15 22:00 ~ 23:00	滋賀県	Shiga (Ohtsu)	0.047
26	3/15 22:00 ~ 23:00	京都府	Kyoto (Kyoto)	0.0472
27	3/15 22:00 ~ 23:00	大阪府	Osaka (Osaka)	0.047
28	3/15 22:00 ~ 23:00	兵庫県	Hyogo (Kobe)	0.042
29	3/15 22:00 ~ 23:00	奈良県	Nara (Nara)	0.053
30	3/15 22:00 ~ 23:00	和歌山県	Wakayama (Wakaya	0.032
31	3/15 22:00 ~ 23:00	鳥取県	Tottori (Touhaku-g	0.068
32	3/15 22:00 ~ 23:00	島根県	Shimane (Matsue)	0.038
33	3/15 22:00 ~ 23:00	岡山県	Okayama (Okayama	0.049
34	3/15 22:00 ~ 23:00	広島県	Hiroshima (Hiroshin	0.047
35	3/15 22:00 ~ 23:00	山口県	Yamaguchi (Yamag	0.093
36	3/15 22:00 ~ 23:00	徳島県	Tokushima (Tokush	0.038
37	3/15 22:00 ~ 23:00	香川県	Kagawa (Takamatsı	0.055
38	3/15 22:00 ~ 23:00	愛媛県	Ehime (Matsuyama	0.048
39	3/15 22:00 ~ 23:00	高知県	Kochi (Kochi)	0.0249
40	3/15 22:00 ~ 23:00	福岡県	Fukuoka (Dazaifu)	0.036

41	3/15 22:00 ~ 23:00	佐賀県	Saga (Saga)	0.04
42	3/15 22:00 ~ 23:00	長崎県	Nagasaki (Ohmura)	0.029
43	3/15 22:00 ~ 23:00	熊本県	Kumamoto (Uto)	0.027
44	3/15 22:00 ~ 23:00	大分県	Oita (Oita)	0.05
45	3/15 22:00 ~ 23:00	宮崎県	Miyazaki (Miyazaki)	0.0262
46	3/15 22:00 ~ 23:00	鹿児島県	Kagoshima (Kagosh	0.0347
47	3/15 22:00 ~ 23:00	沖縄県	Okinawa (Uruma)	0.0214
1	3/15 23:00 ~ 24:00	北海道	Hokkaido (Sapporo)	0.028
2	3/15 23:00 ~ 24:00	青森県	Aomori (Aomori)	0.025
3	3/15 23:00 ~ 24:00	岩手県	Iwate (Morioka)	0.04
4	3/15 23:00 ~ 24:00	宮城県	Miyagi (Sendai)	0.1786
5	3/15 23:00 ~ 24:00	秋田県	Akita (Akita)	0.0373
6	3/15 23:00 ~ 24:00	山形県	Yamagata (Yamaga	0.099
7	3/15 23:00 ~ 24:00	福島県	Fukushima (Futaba-gun)	
8	3/15 23:00 ~ 24:00	茨城県	Ibaraki (Mito)	0.214
9	3/15 23:00 ~ 24:00	栃木県	Tochigi (Itsunomiya	0.286
10	3/15 23:00 ~ 24:00	群馬県	Gunma (Maebashi)	0.48
11	3/15 23:00 ~ 24:00	埼玉県	Saitama (Saitama)	0.069
12	3/15 23:00 ~ 24:00	千葉県	Chiba (Ichihara)	0.033
13	3/15 23:00 ~ 24:00	東京都	Tokyo (Shinjuku-ku	0.0556
14	3/15 23:00 ~ 24:00	神奈川県	Kanagawa (Chigasa	0.062
15	3/15 23:00 ~ 24:00	新潟県	Niigata (Niigata)	0.056
16	3/15 23:00 ~ 24:00	富山県	Toyama (Imizu)	0.059
17	3/15 23:00 ~ 24:00	石川県	Ishikawa (Kanazawa	0.0645
18	3/15 23:00 ~ 24:00	福井県	Fukui (Fukui)	0.06
19	3/15 23:00 ~ 24:00	山梨県	Yamanashi (Kofu)	0.05
20	3/15 23:00 ~ 24:00	長野県	Nagano (Nagano)	0.102
21	3/15 23:00 ~ 24:00	岐阜県	Gifu (Kakamigahara	0.063
22	3/15 23:00 ~ 24:00	静岡県	Shizuoka (Shizuoka	0.0454
23	3/15 23:00 ~ 24:00	愛知県	Aichi (Nagoya)	0.04
24	3/15 23:00 ~ 24:00	三重県	Mie (Yokkaichi)	0.0498
25	3/15 23:00 ~ 24:00	滋賀県	Shiga (Ohtsu)	0.047
26	3/15 23:00 ~ 24:00	京都府	Kyoto (Kyoto)	0.0443
27	3/15 23:00 ~ 24:00	大阪府	Osaka (Osaka)	0.045
28	3/15 23:00 ~ 24:00	兵庫県	Hyogo (Kobe)	0.039
29	3/15 23:00 ~ 24:00	奈良県	Nara (Nara)	0.053
30	3/15 23:00 ~ 24:00	和歌山県	Wakayama (Wakaya	0.032
31	3/15 23:00 ~ 24:00	鳥取県	Tottori (Touhaku-g	0.066
32	3/15 23:00 ~ 24:00	島根県	Shimane (Matsue)	0.037
33	3/15 23:00 ~ 24:00	岡山県	Okayama (Okayama	0.049
34	3/15 23:00 ~ 24:00	広島県	Hiroshima (Hiroshin	0.048
35	3/15 23:00 ~ 24:00	山口県	Yamaguchi (Yamagu	0.093
36	3/15 23:00 ~ 24:00	徳島県	Tokushima (Tokush	0.038
37	3/15 23:00 ~ 24:00	香川県	Kagawa (Takamatsu	0.054
38	3/15 23:00 ~ 24:00	愛媛県	Ehime (Matsuyama)	0.0484
39	3/15 23:00 ~ 24:00	高知県	Kochi (Kochi)	0.0248
40	3/15 23:00 ~ 24:00	福岡県	Fukuoka (Dazaifu)	0.036
41	3/15 23:00 ~ 24:00	佐賀県	Saga (Saga)	0.04
42	3/15 23:00 ~ 24:00	長崎県	Nagasaki (Ohmura)	0.03
43	3/15 23:00 ~ 24:00	熊本県	Kumamoto (Uto)	0.027
44	3/15 23:00 ~ 24:00	大分県	Oita (Oita)	0.05
45	3/15 23:00 ~ 24:00	宮崎県	Miyazaki (Miyazaki)	0.0263
46	3/15 23:00 ~ 24:00	鹿児島県	Kagoshima (Kagosh	0.035
47	3/15 23:00 ~ 24:00	沖縄県	Okinawa (Uruma)	0.0212
1	3/16 00:00 ~ 01:00	北海道	Hokkaido (Sapporo)	0.028
2	3/16 00:00 ~ 01:00	青森県	Aomori (Aomori)	0.026
3	3/16 00:00 ~ 01:00	岩手県	Iwate (Morioka)	0.041

4	3/16 00:00 ~ 01:00	宮城県	Miyagi (Sendai)	0.1935
5	3/16 00:00 ~ 01:00	秋田県	Akita (Akita)	0.0372
6	3/16 00:00 ~ 01:00	山形県	Yamagata (Yamaga	0.107
7	3/16 00:00 ~ 01:00	福島県	Fukushima (Futaba-gun)	
8	3/16 00:00 ~ 01:00	茨城県	Ibaraki (Mito)	0.214
9	3/16 00:00 ~ 01:00	栃木県	Tochigi (Itsunomiya	0.281
10	3/16 00:00 ~ 01:00	群馬県	Gunma (Maebashi)	0.501
11	3/16 00:00 ~ 01:00	埼玉県	Saitama (Saitama)	0.065
12	3/16 00:00 ~ 01:00	千葉県	Chiba (Ichihara)	0.033
13	3/16 00:00 ~ 01:00	東京都	Tokyo (Shinjuku-ku	0.0538
14	3/16 00:00 ~ 01:00	神奈川県	Kanagawa (Chigasa	0.092
15	3/16 00:00 ~ 01:00	新潟県	Niigata (Niigata)	0.053
16	3/16 00:00 ~ 01:00	富山県	Toyama (Imizu)	0.052
17	3/16 00:00 ~ 01:00	石川県	Ishikawa (Kanazawa	0.0565
18	3/16 00:00 ~ 01:00	福井県	Fukui (Fukui)	0.049
19	3/16 00:00 ~ 01:00	山梨県	Yamanashi (Kofu)	0.049
20	3/16 00:00 ~ 01:00	長野県	Nagano (Nagano)	0.0989
21	3/16 00:00 ~ 01:00	岐阜県	Gifu (Kakamigahara	0.062
22	3/16 00:00 ~ 01:00	静岡県	Shizuoka (Shizuoka	0.0453
23	3/16 00:00 ~ 01:00	愛知県	Aichi (Nagoya)	0.04
24	3/16 00:00 ~ 01:00	三重県	Mie (Yokkaichi)	0.0595
25	3/16 00:00 ~ 01:00	滋賀県	Shiga (Ohtsu)	0.041
26	3/16 00:00 ~ 01:00	京都府	Kyoto (Kyoto)	0.0413
27	3/16 00:00 ~ 01:00	大阪府	Osaka (Osaka)	0.044
28	3/16 00:00 ~ 01:00	兵庫県	Hyogo (Kobe)	0.038
29	3/16 00:00 ~ 01:00	奈良県	Nara (Nara)	0.052
30	3/16 00:00 ~ 01:00	和歌山県	Wakayama (Wakaya	0.032
31	3/16 00:00 ~ 01:00	鳥取県	Tottori (Touhaku-g	0.068
32	3/16 00:00 ~ 01:00	島根県	Shimane (Matsue)	0.037
33	3/16 00:00 ~ 01:00	岡山県	Okayama (Okayama	0.049
34	3/16 00:00 ~ 01:00	広島県	Hiroshima (Hiroshin	0.047
35	3/16 00:00 ~ 01:00	山口県	Yamaguchi (Yamagu	0.092
36	3/16 00:00 ~ 01:00	徳島県	Tokushima (Tokush	0.038
37	3/16 00:00 ~ 01:00	香川県	Kagawa (Takamatsu	0.053
38	3/16 00:00 ~ 01:00	愛媛県	Ehime (Matsuyama)	0.0485
39	3/16 00:00 ~ 01:00	高知県	Kochi (Kochi)	0.0247
40	3/16 00:00 ~ 01:00	福岡県	Fukuoka (Dazaifu)	0.036
41	3/16 00:00 ~ 01:00	佐賀県	Saga (Saga)	0.04
42	3/16 00:00 ~ 01:00	長崎県	Nagasaki (Ohmura)	0.029
43	3/16 00:00 ~ 01:00	熊本県	Kumamoto (Uto)	0.027
44	3/16 00:00 ~ 01:00	大分県	Oita (Oita)	0.05
45	3/16 00:00 ~ 01:00	宮崎県	Miyazaki (Miyazaki)	0.0265
46	3/16 00:00 ~ 01:00	鹿児島県	Kagoshima (Kagosh	0.0349
47	3/16 00:00 ~ 01:00	沖縄県	Okinawa (Uruma)	0.0211
1	3/16 01:00 ~ 02:00	北海道	Hokkaido (Sapporo)	0.028
2	3/16 01:00 ~ 02:00	青森県	Aomori (Aomori)	0.026
3	3/16 01:00 ~ 02:00	岩手県	Iwate (Morioka)	0.041
4	3/16 01:00 ~ 02:00	宮城県	Miyagi (Sendai)	0.1928
5	3/16 01:00 ~ 02:00	秋田県	Akita (Akita)	0.0364
6	3/16 01:00 ~ 02:00	山形県	Yamagata (Yamaga	0.11
7	3/16 01:00 ~ 02:00	福島県	Fukushima (Futaba-gun)	
8	3/16 01:00 ~ 02:00	茨城県	Ibaraki (Mito)	0.214
9	3/16 01:00 ~ 02:00	栃木県	Tochigi (Itsunomiya	0.299
10	3/16 01:00 ~ 02:00	群馬県	Gunma (Maebashi)	0.498
11	3/16 01:00 ~ 02:00	埼玉県	Saitama (Saitama)	0.078
12	3/16 01:00 ~ 02:00	千葉県	Chiba (Ichihara)	0.032
13	3/16 01:00 ~ 02:00	東京都	Tokyo (Shinjuku-ku	0.0547

14	3/16 01:00 ~ 02:00	神奈川県	Kanagawa (Chigasa	0.089
15	3/16 01:00 ~ 02:00	新潟県	Niigata (Niigata)	0.053
16	3/16 01:00 ~ 02:00	富山県	Toyama (Imizu)	0.052
17	3/16 01:00 ~ 02:00	石川県	Ishikawa (Kanazawa	0.051
18	3/16 01:00 ~ 02:00	福井県	Fukui (Fukui)	0.049
19	3/16 01:00 ~ 02:00	山梨県	Yamanashi (Kofu)	0.047
20	3/16 01:00 ~ 02:00	長野県	Nagano (Nagano)	0.0964
21	3/16 01:00 ~ 02:00	岐阜県	Gifu (Kakamigahara	0.061
22	3/16 01:00 ~ 02:00	静岡県	Shizuoka (Shizuoka	0.0449
23	3/16 01:00 ~ 02:00	愛知県	Aichi (Nagoya)	0.04
24	3/16 01:00 ~ 02:00	三重県	Mie (Yokkaichi)	0.0659
25	3/16 01:00 ~ 02:00	滋賀県	Shiga (Ohtsu)	0.035
26	3/16 01:00 ~ 02:00	京都府	Kyoto (Kyoto)	0.0391
27	3/16 01:00 ~ 02:00	大阪府	Osaka (Osaka)	0.043
28	3/16 01:00 ~ 02:00	兵庫県	Hyogo (Kobe)	0.038
29	3/16 01:00 ~ 02:00	奈良県	Nara (Nara)	0.049
30	3/16 01:00 ~ 02:00	和歌山県	Wakayama (Wakaya	0.032
31	3/16 01:00 ~ 02:00	鳥取県	Tottori (Touhaku-g	0.066
32	3/16 01:00 ~ 02:00	島根県	Shimane (Matsue)	0.037
33	3/16 01:00 ~ 02:00	岡山県	Okayama (Okayama	0.049
34	3/16 01:00 ~ 02:00	広島県	Hiroshima (Hiroshin	0.048
35	3/16 01:00 ~ 02:00	山口県	Yamaguchi (Yamagı	0.092
36	3/16 01:00 ~ 02:00	徳島県	Tokushima (Tokush	0.038
37	3/16 01:00 ~ 02:00	香川県	Kagawa (Takamatsı	0.053
38	3/16 01:00 ~ 02:00	愛媛県	Ehime (Matsuyama)	0.0482
39	3/16 01:00 ~ 02:00	高知県	Kochi (Kochi)	0.0247
40	3/16 01:00 ~ 02:00	福岡県	Fukuoka (Dazaifu)	0.036
41	3/16 01:00 ~ 02:00	佐賀県	Saga (Saga)	0.04
42	3/16 01:00 ~ 02:00	長崎県	Nagasaki (Ohmura)	0.029
43	3/16 01:00 ~ 02:00	熊本県	Kumamoto (Uto)	0.027
44	3/16 01:00 ~ 02:00	大分県	Oita (Oita)	0.05
45	3/16 01:00 ~ 02:00	宮崎県	Miyazaki (Miyazaki)	0.0265
46	3/16 01:00 ~ 02:00	鹿児島県	Kagoshima (Kagosh	0.0347
47	3/16 01:00 ~ 02:00	沖縄県	Okinawa (Uruma)	0.0212
1	3/16 02:00 ~ 03:00	北海道	Hokkaido (Sapporo)	0.028
2	3/16 02:00 ~ 03:00	青森県	Aomori (Aomori)	0.027
3	3/16 02:00 ~ 03:00	岩手県	Iwate (Morioka)	0.041
4	3/16 02:00 ~ 03:00	宮城県	Miyagi (Sendai)	0.1896
5	3/16 02:00 ~ 03:00	秋田県	Akita (Akita)	0.0356
6	3/16 02:00 ~ 03:00	山形県	Yamagata (Yamaga	0.114
7	3/16 02:00 ~ 03:00	福島県	Fukushima (Futaba-gun)	
8	3/16 02:00 ~ 03:00	茨城県	Ibaraki (Mito)	0.241
9	3/16 02:00 ~ 03:00	栃木県	Tochigi (Itsunomiya	0.322
10	3/16 02:00 ~ 03:00	群馬県	Gunma (Maebashi)	0.361
11	3/16 02:00 ~ 03:00	埼玉県	Saitama (Saitama)	0.101
12	3/16 02:00 ~ 03:00	千葉県	Chiba (Ichihara)	0.031
13	3/16 02:00 ~ 03:00	東京都	Tokyo (Shinjuku-kı	0.0672
14	3/16 02:00 ~ 03:00	神奈川県	Kanagawa (Chigasa	0.078
15	3/16 02:00 ~ 03:00	新潟県	Niigata (Niigata)	0.053
16	3/16 02:00 ~ 03:00	富山県	Toyama (Imizu)	0.051
17	3/16 02:00 ~ 03:00	石川県	Ishikawa (Kanazawa	0.0481
18	3/16 02:00 ~ 03:00	福井県	Fukui (Fukui)	0.046
19	3/16 02:00 ~ 03:00	山梨県	Yamanashi (Kofu)	0.046
20	3/16 02:00 ~ 03:00	長野県	Nagano (Nagano)	0.0946
21	3/16 02:00 ~ 03:00	岐阜県	Gifu (Kakamigahara	0.061
22	3/16 02:00 ~ 03:00	静岡県	Shizuoka (Shizuoka	0.0444
23	3/16 02:00 ~ 03:00	愛知県	Aichi (Nagoya)	0.039

24	3/16 02:00 ~ 03:00	三重県	Mie (Yokkaichi)	0.0542
25	3/16 02:00 ~ 03:00	滋賀県	Shiga (Ohtsu)	0.034
26	3/16 02:00 ~ 03:00	京都府	Kyoto (Kyoto)	0.0386
27	3/16 02:00 ~ 03:00	大阪府	Osaka (Osaka)	0.043
28	3/16 02:00 ~ 03:00	兵庫県	Hyogo (Kobe)	0.038
29	3/16 02:00 ~ 03:00	奈良県	Nara (Nara)	0.048
30	3/16 02:00 ~ 03:00	和歌山県	Wakayama (Wakaya	0.032
31	3/16 02:00 ~ 03:00	鳥取県	Tottori (Touhaku-g	0.07
32	3/16 02:00 ~ 03:00	島根県	Shimane (Matsue)	0.037
33	3/16 02:00 ~ 03:00	岡山県	Okayama (Okayama	0.049
34	3/16 02:00 ~ 03:00	広島県	Hiroshima (Hiroshin	0.048
35	3/16 02:00 ~ 03:00	山口県	Yamaguchi (Yamagu	0.092
36	3/16 02:00 ~ 03:00	徳島県	Tokushima (Tokush	0.038
37	3/16 02:00 ~ 03:00	香川県	Kagawa (Takamatsu	0.052
38	3/16 02:00 ~ 03:00	愛媛県	Ehime (Matsuyama	0.0483
39	3/16 02:00 ~ 03:00	高知県	Kochi (Kochi)	0.0251
40	3/16 02:00 ~ 03:00	福岡県	Fukuoka (Dazaifu)	0.036
41	3/16 02:00 ~ 03:00	佐賀県	Saga (Saga)	0.04
42	3/16 02:00 ~ 03:00	長崎県	Nagasaki (Ohmura)	0.029
43	3/16 02:00 ~ 03:00	熊本県	Kumamoto (Uto)	0.027
44	3/16 02:00 ~ 03:00	大分県	Oita (Oita)	0.05
45	3/16 02:00 ~ 03:00	宮崎県	Miyazaki (Miyazaki)	0.0265
46	3/16 02:00 ~ 03:00	鹿児島県	Kagoshima (Kagosh	0.0343
47	3/16 02:00 ~ 03:00	沖縄県	Okinawa (Uruma)	0.0215
1	3/16 03:00 ~ 04:00	北海道	Hokkaido (Sapporo	0.028
2	3/16 03:00 ~ 04:00	青森県	Aomori (Aomori)	0.029
3	3/16 03:00 ~ 04:00	岩手県	Iwate (Morioka)	0.04
4	3/16 03:00 ~ 04:00	宮城県	Miyagi (Sendai)	0.1832
5	3/16 03:00 ~ 04:00	秋田県	Akita (Akita)	0.0346
6	3/16 03:00 ~ 04:00	山形県	Yamagata (Yamaga	0.104
7	3/16 03:00 ~ 04:00	福島県	Fukushima (Futaba-gun)	
8	3/16 03:00 ~ 04:00	茨城県	Ibaraki (Mito)	0.235
9	3/16 03:00 ~ 04:00	栃木県	Tochigi (Itsunomiya	0.309
10	3/16 03:00 ~ 04:00	群馬県	Gunma (Maebashi)	0.25
11	3/16 03:00 ~ 04:00	埼玉県	Saitama (Saitama)	0.167
12	3/16 03:00 ~ 04:00	千葉県	Chiba (Ichihara)	0.032
13	3/16 03:00 ~ 04:00	東京都	Tokyo (Shinjuku-ku	0.101
14	3/16 03:00 ~ 04:00	神奈川県	Kanagawa (Chigasa	0.108
15	3/16 03:00 ~ 04:00	新潟県	Niigata (Niigata)	0.053
16	3/16 03:00 ~ 04:00	富山県	Toyama (Imizu)	0.049
17	3/16 03:00 ~ 04:00	石川県	Ishikawa (Kanazawa	0.0476
18	3/16 03:00 ~ 04:00	福井県	Fukui (Fukui)	0.052
19	3/16 03:00 ~ 04:00	山梨県	Yamanashi (Kofu)	0.046
20	3/16 03:00 ~ 04:00	長野県	Nagano (Nagano)	0.0943
21	3/16 03:00 ~ 04:00	岐阜県	Gifu (Kakamigahara	0.061
22	3/16 03:00 ~ 04:00	静岡県	Shizuoka (Shizuoka	0.0439
23	3/16 03:00 ~ 04:00	愛知県	Aichi (Nagoya)	0.04
24	3/16 03:00 ~ 04:00	三重県	Mie (Yokkaichi)	0.0486
25	3/16 03:00 ~ 04:00	滋賀県	Shiga (Ohtsu)	0.033
26	3/16 03:00 ~ 04:00	京都府	Kyoto (Kyoto)	0.0385
27	3/16 03:00 ~ 04:00	大阪府	Osaka (Osaka)	0.043
28	3/16 03:00 ~ 04:00	兵庫県	Hyogo (Kobe)	0.038
29	3/16 03:00 ~ 04:00	奈良県	Nara (Nara)	0.048
30	3/16 03:00 ~ 04:00	和歌山県	Wakayama (Wakaya	0.032
31	3/16 03:00 ~ 04:00	鳥取県	Tottori (Touhaku-g	0.071
32	3/16 03:00 ~ 04:00	島根県	Shimane (Matsue)	0.037
33	3/16 03:00 ~ 04:00	岡山県	Okayama (Okayama	0.048

34	3/16 03:00 ~ 04:00	広島県	Hiroshima (Hiroshin	0.047
35	3/16 03:00 ~ 04:00	山口県	Yamaguchi (Yamagı	0.092
36	3/16 03:00 ~ 04:00	徳島県	Tokushima (Tokush	0.038
37	3/16 03:00 ~ 04:00	香川県	Kagawa (Takamatsı	0.052
38	3/16 03:00 ~ 04:00	愛媛県	Ehime (Matsuyama.	0.048
39	3/16 03:00 ~ 04:00	高知県	Kochi (Kochi)	0.0247
40	3/16 03:00 ~ 04:00	福岡県	Fukuoka (Dazaifu)	0.036
41	3/16 03:00 ~ 04:00	佐賀県	Saga (Saga)	0.04
42	3/16 03:00 ~ 04:00	長崎県	Nagasaki (Ohmura)	0.029
43	3/16 03:00 ~ 04:00	熊本県	Kumamoto (Uto)	0.027
44	3/16 03:00 ~ 04:00	大分県	Oita (Oita)	0.05
45	3/16 03:00 ~ 04:00	宮崎県	Miyazaki (Miyazaki)	0.0262
46	3/16 03:00 ~ 04:00	鹿児島県	Kagoshima (Kagosh	0.0343
47	3/16 03:00 ~ 04:00	沖縄県	Okinawa (Uruma)	0.0214
1	3/16 04:00 ~ 05:00	北海道	Hokkaido (Sapporo.	0.028
2	3/16 04:00 ~ 05:00	青森県	Aomori (Aomori)	0.026
3	3/16 04:00 ~ 05:00	岩手県	Iwate (Morioka)	0.039
4	3/16 04:00 ~ 05:00	宮城県	Miyagi (Sendai)	0.1739
5	3/16 04:00 ~ 05:00	秋田県	Akita (Akita)	0.0346
6	3/16 04:00 ~ 05:00	山形県	Yamagata (Yamaga	0.096
7	3/16 04:00 ~ 05:00	福島県	Fukushima (Futaba-gun)	
8	3/16 04:00 ~ 05:00	茨城県	Ibaraki (Mito)	0.218
9	3/16 04:00 ~ 05:00	栃木県	Tochigi (Itsunomiya	0.312
10	3/16 04:00 ~ 05:00	群馬県	Gunma (Maebashi)	0.17
11	3/16 04:00 ~ 05:00	埼玉県	Saitama (Saitama)	0.188
12	3/16 04:00 ~ 05:00	千葉県	Chiba (Ichihara)	0.033
13	3/16 04:00 ~ 05:00	東京都	Tokyo (Shinjuku-ku	0.141
14	3/16 04:00 ~ 05:00	神奈川県	Kanagawa (Chigasa	0.127
15	3/16 04:00 ~ 05:00	新潟県	Niigata (Niigata)	0.055
16	3/16 04:00 ~ 05:00	富山県	Toyama (Imizu)	0.05
17	3/16 04:00 ~ 05:00	石川県	Ishikawa (Kanazawa	0.0533
18	3/16 04:00 ~ 05:00	福井県	Fukui (Fukui)	0.052
19	3/16 04:00 ~ 05:00	山梨県	Yamanashi (Kofu)	0.046
20	3/16 04:00 ~ 05:00	長野県	Nagano (Nagano)	0.0951
21	3/16 04:00 ~ 05:00	岐阜県	Gifu (Kakamigahara	0.061
22	3/16 04:00 ~ 05:00	静岡県	Shizuoka (Shizuoka	0.0425
23	3/16 04:00 ~ 05:00	愛知県	Aichi (Nagoya)	0.04
24	3/16 04:00 ~ 05:00	三重県	Mie (Yokkaichi)	0.0486
25	3/16 04:00 ~ 05:00	滋賀県	Shiga (Ohtsu)	0.033
26	3/16 04:00 ~ 05:00	京都府	Kyoto (Kyoto)	0.0386
27	3/16 04:00 ~ 05:00	大阪府	Osaka (Osaka)	0.043
28	3/16 04:00 ~ 05:00	兵庫県	Hyogo (Kobe)	0.038
29	3/16 04:00 ~ 05:00	奈良県	Nara (Nara)	0.048
30	3/16 04:00 ~ 05:00	和歌山県	Wakayama (Wakaya	0.032
31	3/16 04:00 ~ 05:00	鳥取県	Tottori (Touhaku-g	0.068
32	3/16 04:00 ~ 05:00	島根県	Shimane (Matsue)	0.037
33	3/16 04:00 ~ 05:00	岡山県	Okayama (Okayama	0.048
34	3/16 04:00 ~ 05:00	広島県	Hiroshima (Hiroshin	0.047
35	3/16 04:00 ~ 05:00	山口県	Yamaguchi (Yamagı	0.092
36	3/16 04:00 ~ 05:00	徳島県	Tokushima (Tokush	0.038
37	3/16 04:00 ~ 05:00	香川県	Kagawa (Takamatsı	0.051
38	3/16 04:00 ~ 05:00	愛媛県	Ehime (Matsuyama.	0.0477
39	3/16 04:00 ~ 05:00	高知県	Kochi (Kochi)	0.0249
40	3/16 04:00 ~ 05:00	福岡県	Fukuoka (Dazaifu)	0.036
41	3/16 04:00 ~ 05:00	佐賀県	Saga (Saga)	0.039
42	3/16 04:00 ~ 05:00	長崎県	Nagasaki (Ohmura)	0.029
43	3/16 04:00 ~ 05:00	熊本県	Kumamoto (Uto)	0.027

44	3/16 04:00 ~ 05:00	大分県	Oita (Oita)	0.049
45	3/16 04:00 ~ 05:00	宮崎県	Miyazaki (Miyazaki)	0.0263
46	3/16 04:00 ~ 05:00	鹿児島県	Kagoshima (Kagosh	0.0344
47	3/16 04:00 ~ 05:00	沖縄県	Okinawa (Uruma)	0.0211
1	3/16 05:00 ~ 06:00	北海道	Hokkaido (Sapporo)	0.029
2	3/16 05:00 ~ 06:00	青森県	Aomori (Aomori)	0.023
3	3/16 05:00 ~ 06:00	岩手県	Iwate (Morioka)	0.037
4	3/16 05:00 ~ 06:00	宮城県	Miyagi (Sendai)	0.1674
5	3/16 05:00 ~ 06:00	秋田県	Akita (Akita)	0.0346
6	3/16 05:00 ~ 06:00	山形県	Yamagata (Yamaga	0.09
7	3/16 05:00 ~ 06:00	福島県	Fukushima (Futaba-gun)	
8	3/16 05:00 ~ 06:00	茨城県	Ibaraki (Mito)	0.218
9	3/16 05:00 ~ 06:00	栃木県	Tochigi (Itsunomiya	0.31
10	3/16 05:00 ~ 06:00	群馬県	Gunma (Maebashi)	0.146
11	3/16 05:00 ~ 06:00	埼玉県	Saitama (Saitama)	0.155
12	3/16 05:00 ~ 06:00	千葉県	Chiba (Ichihara)	0.042
13	3/16 05:00 ~ 06:00	東京都	Tokyo (Shinjuku-ku	0.143
14	3/16 05:00 ~ 06:00	神奈川県	Kanagawa (Chigasa	0.152
15	3/16 05:00 ~ 06:00	新潟県	Niigata (Niigata)	0.056
16	3/16 05:00 ~ 06:00	富山県	Toyama (Imizu)	0.051
17	3/16 05:00 ~ 06:00	石川県	Ishikawa (Kanazawa	0.0514
18	3/16 05:00 ~ 06:00	福井県	Fukui (Fukui)	0.048
19	3/16 05:00 ~ 06:00	山梨県	Yamanashi (Kofu)	0.046
20	3/16 05:00 ~ 06:00	長野県	Nagano (Nagano)	0.0959
21	3/16 05:00 ~ 06:00	岐阜県	Gifu (Kakamigahara	0.061
22	3/16 05:00 ~ 06:00	静岡県	Shizuoka (Shizuoka	0.041
23	3/16 05:00 ~ 06:00	愛知県	Aichi (Nagoya)	0.041
24	3/16 05:00 ~ 06:00	三重県	Mie (Yokkaichi)	0.0521
25	3/16 05:00 ~ 06:00	滋賀県	Shiga (Ohtsu)	0.034
26	3/16 05:00 ~ 06:00	京都府	Kyoto (Kyoto)	0.0382
27	3/16 05:00 ~ 06:00	大阪府	Osaka (Osaka)	0.043
28	3/16 05:00 ~ 06:00	兵庫県	Hyogo (Kobe)	0.037
29	3/16 05:00 ~ 06:00	奈良県	Nara (Nara)	0.048
30	3/16 05:00 ~ 06:00	和歌山県	Wakayama (Wakaya	0.032
31	3/16 05:00 ~ 06:00	鳥取県	Tottori (Touhaku-g	0.066
32	3/16 05:00 ~ 06:00	島根県	Shimane (Matsue)	0.037
33	3/16 05:00 ~ 06:00	岡山県	Okayama (Okayama	0.048
34	3/16 05:00 ~ 06:00	広島県	Hiroshima (Hiroshin	0.047
35	3/16 05:00 ~ 06:00	山口県	Yamaguchi (Yamagu	0.092
36	3/16 05:00 ~ 06:00	徳島県	Tokushima (Tokush	0.037
37	3/16 05:00 ~ 06:00	香川県	Kagawa (Takamatsu	0.052
38	3/16 05:00 ~ 06:00	愛媛県	Ehime (Matsuyama)	0.0475
39	3/16 05:00 ~ 06:00	高知県	Kochi (Kochi)	0.0251
40	3/16 05:00 ~ 06:00	福岡県	Fukuoka (Dazaifu)	0.036
41	3/16 05:00 ~ 06:00	佐賀県	Saga (Saga)	0.039
42	3/16 05:00 ~ 06:00	長崎県	Nagasaki (Ohmura)	0.029
43	3/16 05:00 ~ 06:00	熊本県	Kumamoto (Uto)	0.027
44	3/16 05:00 ~ 06:00	大分県	Oita (Oita)	0.049
45	3/16 05:00 ~ 06:00	宮崎県	Miyazaki (Miyazaki)	0.0263
46	3/16 05:00 ~ 06:00	鹿児島県	Kagoshima (Kagosh	0.0342
47	3/16 05:00 ~ 06:00	沖縄県	Okinawa (Uruma)	0.0215
1	3/16 06:00 ~ 07:00	北海道	Hokkaido (Sapporo)	0.029
2	3/16 06:00 ~ 07:00	青森県	Aomori (Aomori)	0.021
3	3/16 06:00 ~ 07:00	岩手県	Iwate (Morioka)	0.036
4	3/16 06:00 ~ 07:00	宮城県	Miyagi (Sendai)	0.1649
5	3/16 06:00 ~ 07:00	秋田県	Akita (Akita)	0.0346
6	3/16 06:00 ~ 07:00	山形県	Yamagata (Yamaga	0.083

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7	3/16 06:00 ~ 07:00	福島県	Fukushima (Futaba-gun)	
8	3/16 06:00 ~ 07:00	茨城県	Ibaraki (Mito)	0.32
9	3/16 06:00 ~ 07:00	栃木県	Tochigi (Itsunomiya	0.308
10	3/16 06:00 ~ 07:00	群馬県	Gunma (Maebashi)	0.158
11	3/16 06:00 ~ 07:00	埼玉県	Saitama (Saitama)	0.208
12	3/16 06:00 ~ 07:00	千葉県	Chiba (Ichihara)	0.053
13	3/16 06:00 ~ 07:00	東京都	Tokyo (Shinjuku-ku	0.142
14	3/16 06:00 ~ 07:00	神奈川県	Kanagawa (Chigasa	0.152
15	3/16 06:00 ~ 07:00	新潟県	Niigata (Niigata)	0.055
16	3/16 06:00 ~ 07:00	富山県	Toyama (Imizu)	0.049
17	3/16 06:00 ~ 07:00	石川県	Ishikawa (Kanazawa	0.0482
18	3/16 06:00 ~ 07:00	福井県	Fukui (Fukui)	0.049
19	3/16 06:00 ~ 07:00	山梨県	Yamanashi (Kofu)	0.046
20	3/16 06:00 ~ 07:00	長野県	Nagano (Nagano)	0.0964
21	3/16 06:00 ~ 07:00	岐阜県	Gifu (Kakamigahara	0.061
22	3/16 06:00 ~ 07:00	静岡県	Shizuoka (Shizuoka	0.0402
23	3/16 06:00 ~ 07:00	愛知県	Aichi (Nagoya)	0.04
24	3/16 06:00 ~ 07:00	三重県	Mie (Yokkaichi)	0.0495
25	3/16 06:00 ~ 07:00	滋賀県	Shiga (Ohtsu)	0.034
26	3/16 06:00 ~ 07:00	京都府	Kyoto (Kyoto)	0.0383
27	3/16 06:00 ~ 07:00	大阪府	Osaka (Osaka)	0.043
28	3/16 06:00 ~ 07:00	兵庫県	Hyogo (Kobe)	0.037
29	3/16 06:00 ~ 07:00	奈良県	Nara (Nara)	0.048
30	3/16 06:00 ~ 07:00	和歌山県	Wakayama (Wakaya	0.032
31	3/16 06:00 ~ 07:00	鳥取県	Tottori (Touhaku-g	0.067
32	3/16 06:00 ~ 07:00	島根県	Shimane (Matsue)	0.037
33	3/16 06:00 ~ 07:00	岡山県	Okayama (Okayama	0.049
34	3/16 06:00 ~ 07:00	広島県	Hiroshima (Hiroshin	0.048
35	3/16 06:00 ~ 07:00	山口県	Yamaguchi (Yamagu	0.092
36	3/16 06:00 ~ 07:00	徳島県	Tokushima (Tokush	0.037
37	3/16 06:00 ~ 07:00	香川県	Kagawa (Takamatsu	0.052
38	3/16 06:00 ~ 07:00	愛媛県	Ehime (Matsuyama)	0.0476
39	3/16 06:00 ~ 07:00	高知県	Kochi (Kochi)	0.0247
40	3/16 06:00 ~ 07:00	福岡県	Fukuoka (Dazaifu)	0.036
41	3/16 06:00 ~ 07:00	佐賀県	Saga (Saga)	0.039
42	3/16 06:00 ~ 07:00	長崎県	Nagasaki (Ohmura)	0.029
43	3/16 06:00 ~ 07:00	熊本県	Kumamoto (Uto)	0.026
44	3/16 06:00 ~ 07:00	大分県	Oita (Oita)	0.049
45	3/16 06:00 ~ 07:00	宮崎県	Miyazaki (Miyazaki)	0.0263
46	3/16 06:00 ~ 07:00	鹿児島県	Kagoshima (Kagosh	0.034
47	3/16 06:00 ~ 07:00	沖縄県	Okinawa (Uruma)	0.0211
1	3/16 07:00 ~ 08:00	北海道	Hokkaido (Sapporo)	0.028
2	3/16 07:00 ~ 08:00	青森県	Aomori (Aomori)	0.021
3	3/16 07:00 ~ 08:00	岩手県	Iwate (Morioka)	0.035
4	3/16 07:00 ~ 08:00	宮城県	Miyagi (Sendai)	0.1624
5	3/16 07:00 ~ 08:00	秋田県	Akita (Akita)	0.0352
6	3/16 07:00 ~ 08:00	山形県	Yamagata (Yamaga	0.078
7	3/16 07:00 ~ 08:00	福島県	Fukushima (Futaba-gun)	
8	3/16 07:00 ~ 08:00	茨城県	Ibaraki (Mito)	1.035
9	3/16 07:00 ~ 08:00	栃木県	Tochigi (Itsunomiya	0.335
10	3/16 07:00 ~ 08:00	群馬県	Gunma (Maebashi)	0.14
11	3/16 07:00 ~ 08:00	埼玉県	Saitama (Saitama)	0.141
12	3/16 07:00 ~ 08:00	千葉県	Chiba (Ichihara)	0.066
13	3/16 07:00 ~ 08:00	東京都	Tokyo (Shinjuku-ku	0.104
14	3/16 07:00 ~ 08:00	神奈川県	Kanagawa (Chigasa	0.153
15	3/16 07:00 ~ 08:00	新潟県	Niigata (Niigata)	0.052
16	3/16 07:00 ~ 08:00	富山県	Toyama (Imizu)	0.049

17	3/16 07:00 ~ 08:00	石川県	Ishikawa (Kanazawa	0.048
18	3/16 07:00 ~ 08:00	福井県	Fukui (Fukui)	0.049
19	3/16 07:00 ~ 08:00	山梨県	Yamanashi (Kofu)	0.045
20	3/16 07:00 ~ 08:00	長野県	Nagano (Nagano)	0.0984
21	3/16 07:00 ~ 08:00	岐阜県	Gifu (Kakamigahara	0.063
22	3/16 07:00 ~ 08:00	静岡県	Shizuoka (Shizuoka	0.0403
23	3/16 07:00 ~ 08:00	愛知県	Aichi (Nagoya)	0.04
24	3/16 07:00 ~ 08:00	三重県	Mie (Yokkaichi)	0.0481
25	3/16 07:00 ~ 08:00	滋賀県	Shiga (Ohtsu)	0.033
26	3/16 07:00 ~ 08:00	京都府	Kyoto (Kyoto)	0.0381
27	3/16 07:00 ~ 08:00	大阪府	Osaka (Osaka)	0.043
28	3/16 07:00 ~ 08:00	兵庫県	Hyogo (Kobe)	0.037
29	3/16 07:00 ~ 08:00	奈良県	Nara (Nara)	0.047
30	3/16 07:00 ~ 08:00	和歌山県	Wakayama (Wakaya	0.032
31	3/16 07:00 ~ 08:00	鳥取県	Tottori (Touhaku-g	0.067
32	3/16 07:00 ~ 08:00	島根県	Shimane (Matsue)	0.043
33	3/16 07:00 ~ 08:00	岡山県	Okayama (Okayama	0.049
34	3/16 07:00 ~ 08:00	広島県	Hiroshima (Hiroshin	0.047
35	3/16 07:00 ~ 08:00	山口県	Yamaguchi (Yamagı	0.092
36	3/16 07:00 ~ 08:00	徳島県	Tokushima (Tokush	0.037
37	3/16 07:00 ~ 08:00	香川県	Kagawa (Takamatsı	0.052
38	3/16 07:00 ~ 08:00	愛媛県	Ehime (Matsuyama)	0.0474
39	3/16 07:00 ~ 08:00	高知県	Kochi (Kochi)	0.0243
40	3/16 07:00 ~ 08:00	福岡県	Fukuoka (Dazaifu)	0.036
41	3/16 07:00 ~ 08:00	佐賀県	Saga (Saga)	0.039
42	3/16 07:00 ~ 08:00	長崎県	Nagasaki (Ohmura)	0.029
43	3/16 07:00 ~ 08:00	熊本県	Kumamoto (Uto)	0.026
44	3/16 07:00 ~ 08:00	大分県	Oita (Oita)	0.049
45	3/16 07:00 ~ 08:00	宮崎県	Miyazaki (Miyazaki)	0.0262
46	3/16 07:00 ~ 08:00	鹿児島県	Kagoshima (Kagosh	0.0338
47	3/16 07:00 ~ 08:00	沖縄県	Okinawa (Uruma)	0.0215
1	3/16 08:00 ~ 09:00	北海道	Hokkaido (Sapporo)	0.028
2	3/16 08:00 ~ 09:00	青森県	Aomori (Aomori)	0.02
3	3/16 08:00 ~ 09:00	岩手県	Iwate (Morioka)	0.034
4	3/16 08:00 ~ 09:00	宮城県	Miyagi (Sendai)	0.1606
5	3/16 08:00 ~ 09:00	秋田県	Akita (Akita)	0.0348
6	3/16 08:00 ~ 09:00	山形県	Yamagata (Yamaga	0.073
7	3/16 08:00 ~ 09:00	福島県	Fukushima (Futaba-gun)	
8	3/16 08:00 ~ 09:00	茨城県	Ibaraki (Mito)	0.962
9	3/16 08:00 ~ 09:00	栃木県	Tochigi (Itsunomiya	0.337
10	3/16 08:00 ~ 09:00	群馬県	Gunma (Maebashi)	0.127
11	3/16 08:00 ~ 09:00	埼玉県	Saitama (Saitama)	0.094
12	3/16 08:00 ~ 09:00	千葉県	Chiba (Ichihara)	0.097
13	3/16 08:00 ~ 09:00	東京都	Tokyo (Shinjuku-ku	0.0891
14	3/16 08:00 ~ 09:00	神奈川県	Kanagawa (Chigasa	0.139
15	3/16 08:00 ~ 09:00	新潟県	Niigata (Niigata)	0.058
16	3/16 08:00 ~ 09:00	富山県	Toyama (Imizu)	0.054
17	3/16 08:00 ~ 09:00	石川県	Ishikawa (Kanazawa	0.0508
18	3/16 08:00 ~ 09:00	福井県	Fukui (Fukui)	0.047
19	3/16 08:00 ~ 09:00	山梨県	Yamanashi (Kofu)	0.045
20	3/16 08:00 ~ 09:00	長野県	Nagano (Nagano)	0.0983
21	3/16 08:00 ~ 09:00	岐阜県	Gifu (Kakamigahara	0.065
22	3/16 08:00 ~ 09:00	静岡県	Shizuoka (Shizuoka	0.0409
23	3/16 08:00 ~ 09:00	愛知県	Aichi (Nagoya)	0.04
24	3/16 08:00 ~ 09:00	三重県	Mie (Yokkaichi)	0.0469
25	3/16 08:00 ~ 09:00	滋賀県	Shiga (Ohtsu)	0.033
26	3/16 08:00 ~ 09:00	京都府	Kyoto (Kyoto)	0.0385

27	3/16 08:00 ~ 09:00	大阪府	Osaka (Osaka)	0.043
28	3/16 08:00 ~ 09:00	兵庫県	Hyogo (Kobe)	0.037
29	3/16 08:00 ~ 09:00	奈良県	Nara (Nara)	0.048
30	3/16 08:00 ~ 09:00	和歌山県	Wakayama (Wakaya	0.032
31	3/16 08:00 ~ 09:00	鳥取県	Tottori (Touhaku-g	0.072
32	3/16 08:00 ~ 09:00	島根県	Shimane (Matsue)	0.046
33	3/16 08:00 ~ 09:00	岡山県	Okayama (Okayama	0.049
34	3/16 08:00 ~ 09:00	広島県	Hiroshima (Hiroshin	0.048
35	3/16 08:00 ~ 09:00	山口県	Yamaguchi (Yamagı	0.092
36	3/16 08:00 ~ 09:00	徳島県	Tokushima (Tokush	0.037
37	3/16 08:00 ~ 09:00	香川県	Kagawa (Takamatsı	0.052
38	3/16 08:00 ~ 09:00	愛媛県	Ehime (Matsuyama	0.0475
39	3/16 08:00 ~ 09:00	高知県	Kochi (Kochi)	0.0244
40	3/16 08:00 ~ 09:00	福岡県	Fukuoka (Dazaifu)	0.036
41	3/16 08:00 ~ 09:00	佐賀県	Saga (Saga)	0.039
42	3/16 08:00 ~ 09:00	長崎県	Nagasaki (Ohmura)	0.028
43	3/16 08:00 ~ 09:00	熊本県	Kumamoto (Uto)	0.026
44	3/16 08:00 ~ 09:00	大分県	Oita (Oita)	0.049
45	3/16 08:00 ~ 09:00	宮崎県	Miyazaki (Miyazaki)	0.026
46	3/16 08:00 ~ 09:00	鹿児島県	Kagoshima (Kagosh	0.0337
47	3/16 08:00 ~ 09:00	沖縄県	Okinawa (Uruma)	0.0213
1	3/16 09:00 ~ 10:00	北海道	Hokkaido (Sapporo	0.028
2	3/16 09:00 ~ 10:00	青森県	Aomori (Aomori)	0.021
3	3/16 09:00 ~ 10:00	岩手県	Iwate (Morioka)	0.033
4	3/16 09:00 ~ 10:00	宮城県	Miyagi (Sendai)	0.158
5	3/16 09:00 ~ 10:00	秋田県	Akita (Akita)	0.035
6	3/16 09:00 ~ 10:00	山形県	Yamagata (Yamaga	0.073
7	3/16 09:00 ~ 10:00	福島県	Fukushima (Futaba-gun)	
8	3/16 09:00 ~ 10:00	茨城県	Ibaraki (Mito)	0.65
9	3/16 09:00 ~ 10:00	栃木県	Tochigi (Itsunomiya	0.254
10	3/16 09:00 ~ 10:00	群馬県	Gunma (Maebashi)	0.123
11	3/16 09:00 ~ 10:00	埼玉県	Saitama (Saitama)	0.073
12	3/16 09:00 ~ 10:00	千葉県	Chiba (Ichihara)	0.141
13	3/16 09:00 ~ 10:00	東京都	Tokyo (Shinjuku-ku	0.069
14	3/16 09:00 ~ 10:00	神奈川県	Kanagawa (Chigasa	0.126
15	3/16 09:00 ~ 10:00	新潟県	Niigata (Niigata)	0.06
16	3/16 09:00 ~ 10:00	富山県	Toyama (Imizu)	0.058
17	3/16 09:00 ~ 10:00	石川県	Ishikawa (Kanazawa	0.057
18	3/16 09:00 ~ 10:00	福井県	Fukui (Fukui)	0.048
19	3/16 09:00 ~ 10:00	山梨県	Yamanashi (Kofu)	0.045
20	3/16 09:00 ~ 10:00	長野県	Nagano (Nagano)	0.097
21	3/16 09:00 ~ 10:00	岐阜県	Gifu (Kakamigahara	0.069
22	3/16 09:00 ~ 10:00	静岡県	Shizuoka (Shizuoka	0.045
23	3/16 09:00 ~ 10:00	愛知県	Aichi (Nagoya)	0.04
24	3/16 09:00 ~ 10:00	三重県	Mie (Yokkaichi)	0.048
25	3/16 09:00 ~ 10:00	滋賀県	Shiga (Ohtsu)	0.033
26	3/16 09:00 ~ 10:00	京都府	Kyoto (Kyoto)	0.039
27	3/16 09:00 ~ 10:00	大阪府	Osaka (Osaka)	0.043
28	3/16 09:00 ~ 10:00	兵庫県	Hyogo (Kobe)	0.037
29	3/16 09:00 ~ 10:00	奈良県	Nara (Nara)	0.048
30	3/16 09:00 ~ 10:00	和歌山県	Wakayama (Wakaya	0.032
31	3/16 09:00 ~ 10:00	鳥取県	Tottori (Touhaku-g	0.071
32	3/16 09:00 ~ 10:00	島根県	Shimane (Matsue)	0.044
33	3/16 09:00 ~ 10:00	岡山県	Okayama (Okayama	0.048
34	3/16 09:00 ~ 10:00	広島県	Hiroshima (Hiroshin	0.048
35	3/16 09:00 ~ 10:00	山口県	Yamaguchi (Yamagı	0.092
36	3/16 09:00 ~ 10:00	徳島県	Tokushima (Tokush	0.037

37	3/16 09:00 ~ 10:00	香川県	Kagawa (Takamatsı	0.052
38	3/16 09:00 ~ 10:00	愛媛県	Ehime (Matsuyama	0.047
39	3/16 09:00 ~ 10:00	高知県	Kochi (Kochi)	0.024
40	3/16 09:00 ~ 10:00	福岡県	Fukuoka (Dazaifu)	0.036
41	3/16 09:00 ~ 10:00	佐賀県	Saga (Saga)	0.04
42	3/16 09:00 ~ 10:00	長崎県	Nagasaki (Ohmura)	0.029
43	3/16 09:00 ~ 10:00	熊本県	Kumamoto (Uto)	0.026
44	3/16 09:00 ~ 10:00	大分県	Oita (Oita)	0.049
45	3/16 09:00 ~ 10:00	宮崎県	Miyazaki (Miyazaki)	0.026
46	3/16 09:00 ~ 10:00	鹿児島県	Kagoshima (Kagosh	0.034
47	3/16 09:00 ~ 10:00	沖縄県	Okinawa (Uruma)	0.021
1	3/16 10:00 ~ 11:00	北海道	Hokkaido (Sapporo	0.027
2	3/16 10:00 ~ 11:00	青森県	Aomori (Aomori)	0.021
3	3/16 10:00 ~ 11:00	岩手県	Iwate (Morioka)	0.033
4	3/16 10:00 ~ 11:00	宮城県	Miyagi (Sendai)	0.159
5	3/16 10:00 ~ 11:00	秋田県	Akita (Akita)	0.035
6	3/16 10:00 ~ 11:00	山形県	Yamagata (Yamaga	0.076
7	3/16 10:00 ~ 11:00	福島県	Fukushima (Futaba-gun)	
8	3/16 10:00 ~ 11:00	茨城県	Ibaraki (Mito)	0.49
9	3/16 10:00 ~ 11:00	栃木県	Tochigi (Itsunomiya	0.229
10	3/16 10:00 ~ 11:00	群馬県	Gunma (Maebashi)	0.122
11	3/16 10:00 ~ 11:00	埼玉県	Saitama (Saitama)	0.071
12	3/16 10:00 ~ 11:00	千葉県	Chiba (Ichihara)	0.124
13	3/16 10:00 ~ 11:00	東京都	Tokyo (Shinjuku-kı	0.058
14	3/16 10:00 ~ 11:00	神奈川県	Kanagawa (Chigasa	0.115
15	3/16 10:00 ~ 11:00	新潟県	Niigata (Niigata)	0.068
16	3/16 10:00 ~ 11:00	富山県	Toyama (Imizu)	0.059
17	3/16 10:00 ~ 11:00	石川県	Ishikawa (Kanazawa	0.052
18	3/16 10:00 ~ 11:00	福井県	Fukui (Fukui)	0.051
19	3/16 10:00 ~ 11:00	山梨県	Yamanashi (Kofu)	0.045
20	3/16 10:00 ~ 11:00	長野県	Nagano (Nagano)	0.1
21	3/16 10:00 ~ 11:00	岐阜県	Gifu (Kakamigahara	0.071
22	3/16 10:00 ~ 11:00	静岡県	Shizuoka (Shizuoka	0.046
23	3/16 10:00 ~ 11:00	愛知県	Aichi (Nagoya)	0.04
24	3/16 10:00 ~ 11:00	三重県	Mie (Yokkaichi)	0.052
25	3/16 10:00 ~ 11:00	滋賀県	Shiga (Ohtsu)	0.034
26	3/16 10:00 ~ 11:00	京都府	Kyoto (Kyoto)	0.039
27	3/16 10:00 ~ 11:00	大阪府	Osaka (Osaka)	0.043
28	3/16 10:00 ~ 11:00	兵庫県	Hyogo (Kobe)	0.037
29	3/16 10:00 ~ 11:00	奈良県	Nara (Nara)	0.048
30	3/16 10:00 ~ 11:00	和歌山県	Wakayama (Wakaya	0.031
31	3/16 10:00 ~ 11:00	鳥取県	Tottori (Touhaku-g	0.078
32	3/16 10:00 ~ 11:00	島根県	Shimane (Matsue)	0.043
33	3/16 10:00 ~ 11:00	岡山県	Okayama (Okayama	0.049
34	3/16 10:00 ~ 11:00	広島県	Hiroshima (Hiroshin	0.048
35	3/16 10:00 ~ 11:00	山口県	Yamaguchi (Yamagı	0.091
36	3/16 10:00 ~ 11:00	徳島県	Tokushima (Tokush	0.037
37	3/16 10:00 ~ 11:00	香川県	Kagawa (Takamatsı	0.053
38	3/16 10:00 ~ 11:00	愛媛県	Ehime (Matsuyama	0.047
39	3/16 10:00 ~ 11:00	高知県	Kochi (Kochi)	0.024
40	3/16 10:00 ~ 11:00	福岡県	Fukuoka (Dazaifu)	0.036
41	3/16 10:00 ~ 11:00	佐賀県	Saga (Saga)	0.04
42	3/16 10:00 ~ 11:00	長崎県	Nagasaki (Ohmura)	0.029
43	3/16 10:00 ~ 11:00	熊本県	Kumamoto (Uto)	0.027
44	3/16 10:00 ~ 11:00	大分県	Oita (Oita)	0.049
45	3/16 10:00 ~ 11:00	宮崎県	Miyazaki (Miyazaki)	0.026
46	3/16 10:00 ~ 11:00	鹿児島県	Kagoshima (Kagosh	0.034

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47	3/16 10:00 ~ 11:00	沖縄県	Okinawa (Uruma)	0.021
1	3/16 11:00 ~ 12:00	北海道	Hokkaido (Sapporo)	0.027
2	3/16 11:00 ~ 12:00	青森県	Aomori (Aomori)	0.022
3	3/16 11:00 ~ 12:00	岩手県	Iwate (Morioka)	0.033
4	3/16 11:00 ~ 12:00	宮城県	Miyagi (Sendai)	0.16
5	3/16 11:00 ~ 12:00	秋田県	Akita (Akita)	0.035
6	3/16 11:00 ~ 12:00	山形県	Yamagata (Yamaga	0.073
7	3/16 11:00 ~ 12:00	福島県	Fukushima (Futaba-gun)	
8	3/16 11:00 ~ 12:00	茨城県	Ibaraki (Mito)	0.446
9	3/16 11:00 ~ 12:00	栃木県	Tochigi (Itsunomiya	0.224
10	3/16 11:00 ~ 12:00	群馬県	Gunma (Maebashi)	0.12
11	3/16 11:00 ~ 12:00	埼玉県	Saitama (Saitama)	0.071
12	3/16 11:00 ~ 12:00	千葉県	Chiba (Ichihara)	0.076
13	3/16 11:00 ~ 12:00	東京都	Tokyo (Shinjuku-ku	0.057
14	3/16 11:00 ~ 12:00	神奈川県	Kanagawa (Chigasa	0.099
15	3/16 11:00 ~ 12:00	新潟県	Niigata (Niigata)	0.06
16	3/16 11:00 ~ 12:00	富山県	Toyama (Imizu)	0.053
17	3/16 11:00 ~ 12:00	石川県	Ishikawa (Kanazawa	0.051
18	3/16 11:00 ~ 12:00	福井県	Fukui (Fukui)	0.053
19	3/16 11:00 ~ 12:00	山梨県	Yamanashi (Kofu)	0.045
20	3/16 11:00 ~ 12:00	長野県	Nagano (Nagano)	0.1
21	3/16 11:00 ~ 12:00	岐阜県	Gifu (Kakamigahara	0.067
22	3/16 11:00 ~ 12:00	静岡県	Shizuoka (Shizuoka	0.046
23	3/16 11:00 ~ 12:00	愛知県	Aichi (Nagoya)	0.04
24	3/16 11:00 ~ 12:00	三重県	Mie (Yokkaichi)	0.054
25	3/16 11:00 ~ 12:00	滋賀県	Shiga (Ohtsu)	0.034
26	3/16 11:00 ~ 12:00	京都府	Kyoto (Kyoto)	0.038
27	3/16 11:00 ~ 12:00	大阪府	Osaka (Osaka)	0.045
28	3/16 11:00 ~ 12:00	兵庫県	Hyogo (Kobe)	0.037
29	3/16 11:00 ~ 12:00	奈良県	Nara (Nara)	0.049
30	3/16 11:00 ~ 12:00	和歌山県	Wakayama (Wakaya	0.032
31	3/16 11:00 ~ 12:00	鳥取県	Tottori (Touhaku-g	0.087
32	3/16 11:00 ~ 12:00	島根県	Shimane (Matsue)	0.04
33	3/16 11:00 ~ 12:00	岡山県	Okayama (Okayama	0.049
34	3/16 11:00 ~ 12:00	広島県	Hiroshima (Hiroshin	0.047
35	3/16 11:00 ~ 12:00	山口県	Yamaguchi (Yamagu	0.091
36	3/16 11:00 ~ 12:00	徳島県	Tokushima (Tokush	0.037
37	3/16 11:00 ~ 12:00	香川県	Kagawa (Takamatsu	0.052
38	3/16 11:00 ~ 12:00	愛媛県	Ehime (Matsuyama)	0.047
39	3/16 11:00 ~ 12:00	高知県	Kochi (Kochi)	0.024
40	3/16 11:00 ~ 12:00	福岡県	Fukuoka (Dazaifu)	0.036
41	3/16 11:00 ~ 12:00	佐賀県	Saga (Saga)	0.04
42	3/16 11:00 ~ 12:00	長崎県	Nagasaki (Ohmura)	0.029
43	3/16 11:00 ~ 12:00	熊本県	Kumamoto (Uto)	0.027
44	3/16 11:00 ~ 12:00	大分県	Oita (Oita)	0.049
45	3/16 11:00 ~ 12:00	宮崎県	Miyazaki (Miyazaki)	0.026
46	3/16 11:00 ~ 12:00	鹿児島県	Kagoshima (Kagosh	0.034
47	3/16 11:00 ~ 12:00	沖縄県	Okinawa (Uruma)	0.021
1	3/16 12:00 ~ 13:00	北海道	Hokkaido (Sapporo)	0.027
2	3/16 12:00 ~ 13:00	青森県	Aomori (Aomori)	0.021
3	3/16 12:00 ~ 13:00	岩手県	Iwate (Morioka)	0.034
4	3/16 12:00 ~ 13:00	宮城県	Miyagi (Sendai)	0.155
5	3/16 12:00 ~ 13:00	秋田県	Akita (Akita)	0.036
6	3/16 12:00 ~ 13:00	山形県	Yamagata (Yamaga	0.063
7	3/16 12:00 ~ 13:00	福島県	Fukushima (Futaba-gun)	
8	3/16 12:00 ~ 13:00	茨城県	Ibaraki (Mito)	0.306
9	3/16 12:00 ~ 13:00	栃木県	Tochigi (Itsunomiya	0.223

10	3/16 12:00 ~ 13:00	群馬県	Gunma (Maebashi)	0.119
11	3/16 12:00 ~ 13:00	埼玉県	Saitama (Saitama)	0.07
12	3/16 12:00 ~ 13:00	千葉県	Chiba (Ichihara)	0.051
13	3/16 12:00 ~ 13:00	東京都	Tokyo (Shinjuku-ku	0.056
14	3/16 12:00 ~ 13:00	神奈川県	Kanagawa (Chigasa	0.079
15	3/16 12:00 ~ 13:00	新潟県	Niigata (Niigata)	0.052
16	3/16 12:00 ~ 13:00	富山県	Toyama (Imizu)	0.05
17	3/16 12:00 ~ 13:00	石川県	Ishikawa (Kanazawa	0.049
18	3/16 12:00 ~ 13:00	福井県	Fukui (Fukui)	0.054
19	3/16 12:00 ~ 13:00	山梨県	Yamanashi (Kofu)	0.045
20	3/16 12:00 ~ 13:00	長野県	Nagano (Nagano)	0.097
21	3/16 12:00 ~ 13:00	岐阜県	Gifu (Kakamigahara	0.065
22	3/16 12:00 ~ 13:00	静岡県	Shizuoka (Shizuoka	0.045
23	3/16 12:00 ~ 13:00	愛知県	Aichi (Nagoya)	0.042
24	3/16 12:00 ~ 13:00	三重県	Mie (Yokkaichi)	0.055
25	3/16 12:00 ~ 13:00	滋賀県	Shiga (Ohtsu)	0.034
26	3/16 12:00 ~ 13:00	京都府	Kyoto (Kyoto)	0.038
27	3/16 12:00 ~ 13:00	大阪府	Osaka (Osaka)	0.049
28	3/16 12:00 ~ 13:00	兵庫県	Hyogo (Kobe)	0.038
29	3/16 12:00 ~ 13:00	奈良県	Nara (Nara)	0.048
30	3/16 12:00 ~ 13:00	和歌山県	Wakayama (Wakaya	0.032
31	3/16 12:00 ~ 13:00	鳥取県	Tottori (Touhaku-g	0.077
32	3/16 12:00 ~ 13:00	島根県	Shimane (Matsue)	0.038
33	3/16 12:00 ~ 13:00	岡山県	Okayama (Okayama	0.05
34	3/16 12:00 ~ 13:00	広島県	Hiroshima (Hiroshin	0.047
35	3/16 12:00 ~ 13:00	山口県	Yamaguchi (Yamagu	0.092
36	3/16 12:00 ~ 13:00	徳島県	Tokushima (Tokush	0.037
37	3/16 12:00 ~ 13:00	香川県	Kagawa (Takamatsu	0.053
38	3/16 12:00 ~ 13:00	愛媛県	Ehime (Matsuyama)	0.047
39	3/16 12:00 ~ 13:00	高知県	Kochi (Kochi)	0.024
40	3/16 12:00 ~ 13:00	福岡県	Fukuoka (Dazaifu)	0.036
41	3/16 12:00 ~ 13:00	佐賀県	Saga (Saga)	0.04
42	3/16 12:00 ~ 13:00	長崎県	Nagasaki (Ohmura)	0.029
43	3/16 12:00 ~ 13:00	熊本県	Kumamoto (Uto)	0.027
44	3/16 12:00 ~ 13:00	大分県	Oita (Oita)	0.049
45	3/16 12:00 ~ 13:00	宮崎県	Miyazaki (Miyazaki)	0.026
46	3/16 12:00 ~ 13:00	鹿児島県	Kagoshima (Kagosh	0.034
47	3/16 12:00 ~ 13:00	沖縄県	Okinawa (Uruma)	0.021
1	3/16 13:00 ~ 14:00	北海道	Hokkaido (Sapporo)	0.027
2	3/16 13:00 ~ 14:00	青森県	Aomori (Aomori)	0.024
3	3/16 13:00 ~ 14:00	岩手県	Iwate (Morioka)	0.034
4	3/16 13:00 ~ 14:00	宮城県	Miyagi (Sendai)	0.151
5	3/16 13:00 ~ 14:00	秋田県	Akita (Akita)	0.038
6	3/16 13:00 ~ 14:00	山形県	Yamagata (Yamaga	0.058
7	3/16 13:00 ~ 14:00	福島県	Fukushima (Futaba-gun)	
8	3/16 13:00 ~ 14:00	茨城県	Ibaraki (Mito)	0.279
9	3/16 13:00 ~ 14:00	栃木県	Tochigi (Itsunomiya	0.22
10	3/16 13:00 ~ 14:00	群馬県	Gunma (Maebashi)	0.119
11	3/16 13:00 ~ 14:00	埼玉県	Saitama (Saitama)	0.069
12	3/16 13:00 ~ 14:00	千葉県	Chiba (Ichihara)	0.042
13	3/16 13:00 ~ 14:00	東京都	Tokyo (Shinjuku-ku	0.055
14	3/16 13:00 ~ 14:00	神奈川県	Kanagawa (Chigasa	0.065
15	3/16 13:00 ~ 14:00	新潟県	Niigata (Niigata)	0.051
16	3/16 13:00 ~ 14:00	富山県	Toyama (Imizu)	0.05
17	3/16 13:00 ~ 14:00	石川県	Ishikawa (Kanazawa	0.048
18	3/16 13:00 ~ 14:00	福井県	Fukui (Fukui)	0.058
19	3/16 13:00 ~ 14:00	山梨県	Yamanashi (Kofu)	0.045

20	3/16 13:00 ~ 14:00	長野県	Nagano (Nagano)	0.091
21	3/16 13:00 ~ 14:00	岐阜県	Gifu (Kakamigahara	0.064
22	3/16 13:00 ~ 14:00	静岡県	Shizuoka (Shizuoka	0.045
23	3/16 13:00 ~ 14:00	愛知県	Aichi (Nagoya)	0.044
24	3/16 13:00 ~ 14:00	三重県	Mie (Yokkaichi)	0.056
25	3/16 13:00 ~ 14:00	滋賀県	Shiga (Ohtsu)	0.034
26	3/16 13:00 ~ 14:00	京都府	Kyoto (Kyoto)	0.039
27	3/16 13:00 ~ 14:00	大阪府	Osaka (Osaka)	0.05
28	3/16 13:00 ~ 14:00	兵庫県	Hyogo (Kobe)	0.04
29	3/16 13:00 ~ 14:00	奈良県	Nara (Nara)	0.048
30	3/16 13:00 ~ 14:00	和歌山県	Wakayama (Wakaya	0.032
31	3/16 13:00 ~ 14:00	鳥取県	Tottori (Touhaku-g	0.069
32	3/16 13:00 ~ 14:00	島根県	Shimane (Matsue)	0.037
33	3/16 13:00 ~ 14:00	岡山県	Okayama (Okayama	0.051
34	3/16 13:00 ~ 14:00	広島県	Hiroshima (Hiroshin	0.046
35	3/16 13:00 ~ 14:00	山口県	Yamaguchi (Yamagı	0.091
36	3/16 13:00 ~ 14:00	徳島県	Tokushima (Tokush	0.038
37	3/16 13:00 ~ 14:00	香川県	Kagawa (Takamatsı	0.053
38	3/16 13:00 ~ 14:00	愛媛県	Ehime (Matsuyama	0.047
39	3/16 13:00 ~ 14:00	高知県	Kochi (Kochi)	0.024
40	3/16 13:00 ~ 14:00	福岡県	Fukuoka (Dazaifu)	0.036
41	3/16 13:00 ~ 14:00	佐賀県	Saga (Saga)	0.04
42	3/16 13:00 ~ 14:00	長崎県	Nagasaki (Ohmura)	0.029
43	3/16 13:00 ~ 14:00	熊本県	Kumamoto (Uto)	0.027
44	3/16 13:00 ~ 14:00	大分県	Oita (Oita)	0.049
45	3/16 13:00 ~ 14:00	宮崎県	Miyazaki (Miyazaki)	0.026
46	3/16 13:00 ~ 14:00	鹿児島県	Kagoshima (Kagosh	0.034
47	3/16 13:00 ~ 14:00	沖縄県	Okinawa (Uruma)	0.021
1	3/16 14:00 ~ 15:00	北海道	Hokkaido (Sapporo	0.027
2	3/16 14:00 ~ 15:00	青森県	Aomori (Aomori)	0.022
3	3/16 14:00 ~ 15:00	岩手県	Iwate (Morioka)	0.04
4	3/16 14:00 ~ 15:00	宮城県	Miyagi (Sendai)	0.15
5	3/16 14:00 ~ 15:00	秋田県	Akita (Akita)	0.037
6	3/16 14:00 ~ 15:00	山形県	Yamagata (Yamaga	0.057
7	3/16 14:00 ~ 15:00	福島県	Fukushima (Futaba-gun)	
8	3/16 14:00 ~ 15:00	茨城県	Ibaraki (Mito)	0.267
9	3/16 14:00 ~ 15:00	栃木県	Tochigi (Itsunomiya	0.218
10	3/16 14:00 ~ 15:00	群馬県	Gunma (Maebashi)	0.116
11	3/16 14:00 ~ 15:00	埼玉県	Saitama (Saitama)	0.069
12	3/16 14:00 ~ 15:00	千葉県	Chiba (Ichihara)	0.042
13	3/16 14:00 ~ 15:00	東京都	Tokyo (Shinjuku-kı	0.054
14	3/16 14:00 ~ 15:00	神奈川県	Kanagawa (Chigasa	0.057
15	3/16 14:00 ~ 15:00	新潟県	Niigata (Niigata)	0.049
16	3/16 14:00 ~ 15:00	富山県	Toyama (Imizu)	0.049
17	3/16 14:00 ~ 15:00	石川県	Ishikawa (Kanazawa	0.047
18	3/16 14:00 ~ 15:00	福井県	Fukui (Fukui)	0.053
19	3/16 14:00 ~ 15:00	山梨県	Yamanashi (Kofu)	0.045
20	3/16 14:00 ~ 15:00	長野県	Nagano (Nagano)	0.088
21	3/16 14:00 ~ 15:00	岐阜県	Gifu (Kakamigahara	0.066
22	3/16 14:00 ~ 15:00	静岡県	Shizuoka (Shizuoka	0.045
23	3/16 14:00 ~ 15:00	愛知県	Aichi (Nagoya)	0.041
24	3/16 14:00 ~ 15:00	三重県	Mie (Yokkaichi)	0.053
25	3/16 14:00 ~ 15:00	滋賀県	Shiga (Ohtsu)	0.035
26	3/16 14:00 ~ 15:00	京都府	Kyoto (Kyoto)	0.04
27	3/16 14:00 ~ 15:00	大阪府	Osaka (Osaka)	0.051
28	3/16 14:00 ~ 15:00	兵庫県	Hyogo (Kobe)	0.038
29	3/16 14:00 ~ 15:00	奈良県	Nara (Nara)	0.048

30	3/16 14:00 ~ 15:00	和歌山県	Wakayama (Wakaya	0.032
31	3/16 14:00 ~ 15:00	鳥取県	Tottori (Touhaku-g	0.066
32	3/16 14:00 ~ 15:00	島根県	Shimane (Matsue)	0.037
33	3/16 14:00 ~ 15:00	岡山県	Okayama (Okayama	0.052
34	3/16 14:00 ~ 15:00	広島県	Hiroshima (Hiroshin	0.046
35	3/16 14:00 ~ 15:00	山口県	Yamaguchi (Yamagı	0.091
36	3/16 14:00 ~ 15:00	徳島県	Tokushima (Tokush	0.039
37	3/16 14:00 ~ 15:00	香川県	Kagawa (Takamatsı	0.054
38	3/16 14:00 ~ 15:00	愛媛県	Ehime (Matsuyama	0.047
39	3/16 14:00 ~ 15:00	高知県	Kochi (Kochi)	0.024
40	3/16 14:00 ~ 15:00	福岡県	Fukuoka (Dazaifu)	0.036
41	3/16 14:00 ~ 15:00	佐賀県	Saga (Saga)	0.04
42	3/16 14:00 ~ 15:00	長崎県	Nagasaki (Ohmura)	0.029
43	3/16 14:00 ~ 15:00	熊本県	Kumamoto (Uto)	0.027
44	3/16 14:00 ~ 15:00	大分県	Oita (Oita)	0.049
45	3/16 14:00 ~ 15:00	宮崎県	Miyazaki (Miyazaki)	0.026
46	3/16 14:00 ~ 15:00	鹿児島県	Kagoshima (Kagosh	0.034
47	3/16 14:00 ~ 15:00	沖縄県	Okinawa (Uruma)	0.021
1	3/16 15:00 ~ 16:00	北海道	Hokkaido (Sapporo	0.027
2	3/16 15:00 ~ 16:00	青森県	Aomori (Aomori)	0.022
3	3/16 15:00 ~ 16:00	岩手県	Iwate (Morioka)	0.042
4	3/16 15:00 ~ 16:00	宮城県	Miyagi (Sendai)	0.151
5	3/16 15:00 ~ 16:00	秋田県	Akita (Akita)	0.039
6	3/16 15:00 ~ 16:00	山形県	Yamagata (Yamaga	0.056
7	3/16 15:00 ~ 16:00	福島県	Fukushima (Futaba-gun)	
8	3/16 15:00 ~ 16:00	茨城県	Ibaraki (Mito)	0.259
9	3/16 15:00 ~ 16:00	栃木県	Tochigi (Itsunomiya	0.216
10	3/16 15:00 ~ 16:00	群馬県	Gunma (Maebashi)	0.111
11	3/16 15:00 ~ 16:00	埼玉県	Saitama (Saitama)	0.068
12	3/16 15:00 ~ 16:00	千葉県	Chiba (Ichihara)	0.042
13	3/16 15:00 ~ 16:00	東京都	Tokyo (Shinjuku-ku	0.054
14	3/16 15:00 ~ 16:00	神奈川県	Kanagawa (Chigasa	0.056
15	3/16 15:00 ~ 16:00	新潟県	Niigata (Niigata)	0.048
16	3/16 15:00 ~ 16:00	富山県	Toyama (Imizu)	0.048
17	3/16 15:00 ~ 16:00	石川県	Ishikawa (Kanazawa	0.047
18	3/16 15:00 ~ 16:00	福井県	Fukui (Fukui)	0.048
19	3/16 15:00 ~ 16:00	山梨県	Yamanashi (Kofu)	0.045
20	3/16 15:00 ~ 16:00	長野県	Nagano (Nagano)	0.089
21	3/16 15:00 ~ 16:00	岐阜県	Gifu (Kakamigahara	0.063
22	3/16 15:00 ~ 16:00	静岡県	Shizuoka (Shizuoka	0.045
23	3/16 15:00 ~ 16:00	愛知県	Aichi (Nagoya)	0.04
24	3/16 15:00 ~ 16:00	三重県	Mie (Yokkaichi)	0.053
25	3/16 15:00 ~ 16:00	滋賀県	Shiga (Ohtsu)	0.035
26	3/16 15:00 ~ 16:00	京都府	Kyoto (Kyoto)	0.041
27	3/16 15:00 ~ 16:00	大阪府	Osaka (Osaka)	0.047
28	3/16 15:00 ~ 16:00	兵庫県	Hyogo (Kobe)	0.038
29	3/16 15:00 ~ 16:00	奈良県	Nara (Nara)	0.048
30	3/16 15:00 ~ 16:00	和歌山県	Wakayama (Wakaya	0.032
31	3/16 15:00 ~ 16:00	鳥取県	Tottori (Touhaku-g	0.064
32	3/16 15:00 ~ 16:00	島根県	Shimane (Matsue)	0.038
33	3/16 15:00 ~ 16:00	岡山県	Okayama (Okayama	0.051
34	3/16 15:00 ~ 16:00	広島県	Hiroshima (Hiroshin	0.046
35	3/16 15:00 ~ 16:00	山口県	Yamaguchi (Yamagı	0.091
36	3/16 15:00 ~ 16:00	徳島県	Tokushima (Tokush	0.039
37	3/16 15:00 ~ 16:00	香川県	Kagawa (Takamatsı	0.054
38	3/16 15:00 ~ 16:00	愛媛県	Ehime (Matsuyama	0.047
39	3/16 15:00 ~ 16:00	高知県	Kochi (Kochi)	0.024

40	3/16 15:00 ~ 16:00	福岡県	Fukuoka (Dazaifu)	0.036
41	3/16 15:00 ~ 16:00	佐賀県	Saga (Saga)	0.04
42	3/16 15:00 ~ 16:00	長崎県	Nagasaki (Ohmura)	0.029
43	3/16 15:00 ~ 16:00	熊本県	Kumamoto (Uto)	0.027
44	3/16 15:00 ~ 16:00	大分県	Oita (Oita)	0.049
45	3/16 15:00 ~ 16:00	宮崎県	Miyazaki (Miyazaki)	0.026
46	3/16 15:00 ~ 16:00	鹿児島県	Kagoshima (Kagosh	0.034
47	3/16 15:00 ~ 16:00	沖縄県	Okinawa (Uruma)	0.021
1	3/16 16:00 ~ 17:00	北海道	Hokkaido (Sapporo)	0.027
2	3/16 16:00 ~ 17:00	青森県	Aomori (Aomori)	0.025
3	3/16 16:00 ~ 17:00	岩手県	Iwate (Morioka)	0.037
4	3/16 16:00 ~ 17:00	宮城県	Miyagi (Sendai)	0.153
5	3/16 16:00 ~ 17:00	秋田県	Akita (Akita)	0.039
6	3/16 16:00 ~ 17:00	山形県	Yamagata (Yamaga	0.057
7	3/16 16:00 ~ 17:00	福島県	Fukushima (Futaba-gun)	
8	3/16 16:00 ~ 17:00	茨城県	Ibaraki (Mito)	0.252
9	3/16 16:00 ~ 17:00	栃木県	Tochigi (Itsunomiya	0.215
10	3/16 16:00 ~ 17:00	群馬県	Gunma (Maebashi)	0.11
11	3/16 16:00 ~ 17:00	埼玉県	Saitama (Saitama)	0.068
12	3/16 16:00 ~ 17:00	千葉県	Chiba (Ichihara)	0.041
13	3/16 16:00 ~ 17:00	東京都	Tokyo (Shinjuku-ku	0.054
14	3/16 16:00 ~ 17:00	神奈川県	Kanagawa (Chigasa	0.056
15	3/16 16:00 ~ 17:00	新潟県	Niigata (Niigata)	0.047
16	3/16 16:00 ~ 17:00	富山県	Toyama (Imizu)	0.048
17	3/16 16:00 ~ 17:00	石川県	Ishikawa (Kanazawa	0.048
18	3/16 16:00 ~ 17:00	福井県	Fukui (Fukui)	0.046
19	3/16 16:00 ~ 17:00	山梨県	Yamanashi (Kofu)	0.046
20	3/16 16:00 ~ 17:00	長野県	Nagano (Nagano)	0.087
21	3/16 16:00 ~ 17:00	岐阜県	Gifu (Kakamigahara	0.061
22	3/16 16:00 ~ 17:00	静岡県	Shizuoka (Shizuoka	0.045
23	3/16 16:00 ~ 17:00	愛知県	Aichi (Nagoya)	0.04
24	3/16 16:00 ~ 17:00	三重県	Mie (Yokkaichi)	0.056
25	3/16 16:00 ~ 17:00	滋賀県	Shiga (Ohtsu)	0.036
26	3/16 16:00 ~ 17:00	京都府	Kyoto (Kyoto)	0.041
27	3/16 16:00 ~ 17:00	大阪府	Osaka (Osaka)	0.045
28	3/16 16:00 ~ 17:00	兵庫県	Hyogo (Kobe)	0.038
29	3/16 16:00 ~ 17:00	奈良県	Nara (Nara)	0.047
30	3/16 16:00 ~ 17:00	和歌山県	Wakayama (Wakaya	0.032
31	3/16 16:00 ~ 17:00	鳥取県	Tottori (Touhaku-g	0.067
32	3/16 16:00 ~ 17:00	島根県	Shimane (Matsue)	0.039
33	3/16 16:00 ~ 17:00	岡山県	Okayama (Okayama	0.05
34	3/16 16:00 ~ 17:00	広島県	Hiroshima (Hiroshin	0.046
35	3/16 16:00 ~ 17:00	山口県	Yamaguchi (Yamagu	0.092
36	3/16 16:00 ~ 17:00	徳島県	Tokushima (Tokush	0.04
37	3/16 16:00 ~ 17:00	香川県	Kagawa (Takamatsu	0.053
38	3/16 16:00 ~ 17:00	愛媛県	Ehime (Matsuyama)	0.047
39	3/16 16:00 ~ 17:00	高知県	Kochi (Kochi)	0.024
40	3/16 16:00 ~ 17:00	福岡県	Fukuoka (Dazaifu)	0.036
41	3/16 16:00 ~ 17:00	佐賀県	Saga (Saga)	0.04
42	3/16 16:00 ~ 17:00	長崎県	Nagasaki (Ohmura)	0.029
43	3/16 16:00 ~ 17:00	熊本県	Kumamoto (Uto)	0.027
44	3/16 16:00 ~ 17:00	大分県	Oita (Oita)	0.049
45	3/16 16:00 ~ 17:00	宮崎県	Miyazaki (Miyazaki)	0.026
46	3/16 16:00 ~ 17:00	鹿児島県	Kagoshima (Kagosh	0.034
47	3/16 16:00 ~ 17:00	沖縄県	Okinawa (Uruma)	0.021
1	3/16 17:00 ~ 18:00	北海道	Hokkaido (Sapporo)	0.027
2	3/16 17:00 ~ 18:00	青森県	Aomori (Aomori)	0.042

3	3/16 17:00 ~ 18:00	岩手県	Iwate (Morioka)	0.039
4	3/16 17:00 ~ 18:00	宮城県	Miyagi (Sendai)	0.155
5	3/16 17:00 ~ 18:00	秋田県	Akita (Akita)	0.035
6	3/16 17:00 ~ 18:00	山形県	Yamagata (Yamaga	0.056
7	3/16 17:00 ~ 18:00	福島県	Fukushima (Futaba-gun)	
8	3/16 17:00 ~ 18:00	茨城県	Ibaraki (Mito)	0.248
9	3/16 17:00 ~ 18:00	栃木県	Tochigi (Itsunomiya	0.214
10	3/16 17:00 ~ 18:00	群馬県	Gunma (Maebashi)	0.11
11	3/16 17:00 ~ 18:00	埼玉県	Saitama (Saitama)	0.068
12	3/16 17:00 ~ 18:00	千葉県	Chiba (Ichihara)	0.041
13	3/16 17:00 ~ 18:00	東京都	Tokyo (Shinjuku-ku	0.053
14	3/16 17:00 ~ 18:00	神奈川県	Kanagawa (Chigasa	0.056
15	3/16 17:00 ~ 18:00	新潟県	Niigata (Niigata)	0.047
16	3/16 17:00 ~ 18:00	富山県	Toyama (Imizu)	0.051
17	3/16 17:00 ~ 18:00	石川県	Ishikawa (Kanazawa	0.051
18	3/16 17:00 ~ 18:00	福井県	Fukui (Fukui)	0.046
19	3/16 17:00 ~ 18:00	山梨県	Yamanashi (Kofu)	0.045
20	3/16 17:00 ~ 18:00	長野県	Nagano (Nagano)	0.087
21	3/16 17:00 ~ 18:00	岐阜県	Gifu (Kakamigahara	0.061
22	3/16 17:00 ~ 18:00	静岡県	Shizuoka (Shizuoka	0.042
23	3/16 17:00 ~ 18:00	愛知県	Aichi (Nagoya)	0.04
24	3/16 17:00 ~ 18:00	三重県	Mie (Yokkaichi)	0.053
25	3/16 17:00 ~ 18:00	滋賀県	Shiga (Ohtsu)	0.035
26	3/16 17:00 ~ 18:00	京都府	Kyoto (Kyoto)	0.041
27	3/16 17:00 ~ 18:00	大阪府	Osaka (Osaka)	0.044
28	3/16 17:00 ~ 18:00	兵庫県	Hyogo (Kobe)	0.038
29	3/16 17:00 ~ 18:00	奈良県	Nara (Nara)	0.047
30	3/16 17:00 ~ 18:00	和歌山県	Wakayama (Wakaya	0.032
31	3/16 17:00 ~ 18:00	鳥取県	Tottori (Touhaku-g	0.075
32	3/16 17:00 ~ 18:00	島根県	Shimane (Matsue)	0.038
33	3/16 17:00 ~ 18:00	岡山県	Okayama (Okayama	0.049
34	3/16 17:00 ~ 18:00	広島県	Hiroshima (Hiroshin	0.046
35	3/16 17:00 ~ 18:00	山口県	Yamaguchi (Yamagu	0.092
36	3/16 17:00 ~ 18:00	徳島県	Tokushima (Tokush	0.04
37	3/16 17:00 ~ 18:00	香川県	Kagawa (Takamatsu	0.053
38	3/16 17:00 ~ 18:00	愛媛県	Ehime (Matsuyama)	0.047
39	3/16 17:00 ~ 18:00	高知県	Kochi (Kochi)	0.024
40	3/16 17:00 ~ 18:00	福岡県	Fukuoka (Dazaifu)	0.036
41	3/16 17:00 ~ 18:00	佐賀県	Saga (Saga)	0.04
42	3/16 17:00 ~ 18:00	長崎県	Nagasaki (Ohmura)	0.029
43	3/16 17:00 ~ 18:00	熊本県	Kumamoto (Uto)	0.027
44	3/16 17:00 ~ 18:00	大分県	Oita (Oita)	0.05
45	3/16 17:00 ~ 18:00	宮崎県	Miyazaki (Miyazaki)	0.026
46	3/16 17:00 ~ 18:00	鹿児島県	Kagoshima (Kagosh	0.034
47	3/16 17:00 ~ 18:00	沖縄県	Okinawa (Uruma)	0.021
1	3/16 18:00 ~ 19:00	北海道	Hokkaido (Sapporo)	0.028
2	3/16 18:00 ~ 19:00	青森県	Aomori (Aomori)	0.05
3	3/16 18:00 ~ 19:00	岩手県	Iwate (Morioka)	0.036
4	3/16 18:00 ~ 19:00	宮城県	Miyagi (Sendai)	0.153
5	3/16 18:00 ~ 19:00	秋田県	Akita (Akita)	0.036
6	3/16 18:00 ~ 19:00	山形県	Yamagata (Yamaga	0.052
7	3/16 18:00 ~ 19:00	福島県	Fukushima (Futaba-gun)	
8	3/16 18:00 ~ 19:00	茨城県	Ibaraki (Mito)	0.244
9	3/16 18:00 ~ 19:00	栃木県	Tochigi (Itsunomiya	0.213
10	3/16 18:00 ~ 19:00	群馬県	Gunma (Maebashi)	0.109
11	3/16 18:00 ~ 19:00	埼玉県	Saitama (Saitama)	0.068
12	3/16 18:00 ~ 19:00	千葉県	Chiba (Ichihara)	0.041

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13	3/16 18:00 ~ 19:00	東京都	Tokyo (Shinjuku-ku	0.053
14	3/16 18:00 ~ 19:00	神奈川県	Kanagawa (Chigasa	0.056
15	3/16 18:00 ~ 19:00	新潟県	Niigata (Niigata)	0.048
16	3/16 18:00 ~ 19:00	富山県	Toyama (Imizu)	0.055
17	3/16 18:00 ~ 19:00	石川県	Ishikawa (Kanazawa	0.05
18	3/16 18:00 ~ 19:00	福井県	Fukui (Fukui)	0.049
19	3/16 18:00 ~ 19:00	山梨県	Yamanashi (Kofu)	0.045
20	3/16 18:00 ~ 19:00	長野県	Nagano (Nagano)	0.087
21	3/16 18:00 ~ 19:00	岐阜県	Gifu (Kakamigahara	0.061
22	3/16 18:00 ~ 19:00	静岡県	Shizuoka (Shizuoka	0.04
23	3/16 18:00 ~ 19:00	愛知県	Aichi (Nagoya)	0.04
24	3/16 18:00 ~ 19:00	三重県	Mie (Yokkaichi)	0.055
25	3/16 18:00 ~ 19:00	滋賀県	Shiga (Ohtsu)	0.034
26	3/16 18:00 ~ 19:00	京都府	Kyoto (Kyoto)	0.039
27	3/16 18:00 ~ 19:00	大阪府	Osaka (Osaka)	0.043
28	3/16 18:00 ~ 19:00	兵庫県	Hyogo (Kobe)	0.037
29	3/16 18:00 ~ 19:00	奈良県	Nara (Nara)	0.047
30	3/16 18:00 ~ 19:00	和歌山県	Wakayama (Wakaya	0.032
31	3/16 18:00 ~ 19:00	鳥取県	Tottori (Touhaku-g	0.074
32	3/16 18:00 ~ 19:00	島根県	Shimane (Matsue)	0.037
33	3/16 18:00 ~ 19:00	岡山県	Okayama (Okayama	0.049
34	3/16 18:00 ~ 19:00	広島県	Hiroshima (Hiroshin	0.046
35	3/16 18:00 ~ 19:00	山口県	Yamaguchi (Yamagu	0.092
36	3/16 18:00 ~ 19:00	徳島県	Tokushima (Tokush	0.04
37	3/16 18:00 ~ 19:00	香川県	Kagawa (Takamatsu	0.052
38	3/16 18:00 ~ 19:00	愛媛県	Ehime (Matsuyama)	0.048
39	3/16 18:00 ~ 19:00	高知県	Kochi (Kochi)	0.024
40	3/16 18:00 ~ 19:00	福岡県	Fukuoka (Dazaifu)	0.036
41	3/16 18:00 ~ 19:00	佐賀県	Saga (Saga)	0.04
42	3/16 18:00 ~ 19:00	長崎県	Nagasaki (Ohmura)	0.029
43	3/16 18:00 ~ 19:00	熊本県	Kumamoto (Uto)	0.027
44	3/16 18:00 ~ 19:00	大分県	Oita (Oita)	0.05
45	3/16 18:00 ~ 19:00	宮崎県	Miyazaki (Miyazaki)	0.026
46	3/16 18:00 ~ 19:00	鹿児島県	Kagoshima (Kagosh	0.035
47	3/16 18:00 ~ 19:00	沖縄県	Okinawa (Uruma)	0.021
1	3/16 19:00 ~ 20:00	北海道	Hokkaido (Sapporo)	0.027
2	3/16 19:00 ~ 20:00	青森県	Aomori (Aomori)	0.05
3	3/16 19:00 ~ 20:00	岩手県	Iwate (Morioka)	0.034
4	3/16 19:00 ~ 20:00	宮城県	Miyagi (Sendai)	0.153
5	3/16 19:00 ~ 20:00	秋田県	Akita (Akita)	0.037
6	3/16 19:00 ~ 20:00	山形県	Yamagata (Yamaga	0.053
7	3/16 19:00 ~ 20:00	福島県	Fukushima (Futaba-gun)	
8	3/16 19:00 ~ 20:00	茨城県	Ibaraki (Mito)	0.241
9	3/16 19:00 ~ 20:00	栃木県	Tochigi (Itsunomiya	0.212
10	3/16 19:00 ~ 20:00	群馬県	Gunma (Maebashi)	0.109
11	3/16 19:00 ~ 20:00	埼玉県	Saitama (Saitama)	0.067
12	3/16 19:00 ~ 20:00	千葉県	Chiba (Ichihara)	0.04
13	3/16 19:00 ~ 20:00	東京都	Tokyo (Shinjuku-ku	0.053
14	3/16 19:00 ~ 20:00	神奈川県	Kanagawa (Chigasa	0.055
15	3/16 19:00 ~ 20:00	新潟県	Niigata (Niigata)	0.048
16	3/16 19:00 ~ 20:00	富山県	Toyama (Imizu)	0.052
17	3/16 19:00 ~ 20:00	石川県	Ishikawa (Kanazawa	0.048
18	3/16 19:00 ~ 20:00	福井県	Fukui (Fukui)	0.049
19	3/16 19:00 ~ 20:00	山梨県	Yamanashi (Kofu)	0.045
20	3/16 19:00 ~ 20:00	長野県	Nagano (Nagano)	0.089
21	3/16 19:00 ~ 20:00	岐阜県	Gifu (Kakamigahara	0.061
22	3/16 19:00 ~ 20:00	静岡県	Shizuoka (Shizuoka	0.04

23	3/16 19:00 ~ 20:00	愛知県	Aichi (Nagoya)	0.04
24	3/16 19:00 ~ 20:00	三重県	Mie (Yokkaichi)	0.057
25	3/16 19:00 ~ 20:00	滋賀県	Shiga (Ohtsu)	0.034
26	3/16 19:00 ~ 20:00	京都府	Kyoto (Kyoto)	0.038
27	3/16 19:00 ~ 20:00	大阪府	Osaka (Osaka)	0.043
28	3/16 19:00 ~ 20:00	兵庫県	Hyogo (Kobe)	0.037
29	3/16 19:00 ~ 20:00	奈良県	Nara (Nara)	0.047
30	3/16 19:00 ~ 20:00	和歌山県	Wakayama (Wakaya	0.032
31	3/16 19:00 ~ 20:00	鳥取県	Tottori (Touhaku-g	0.072
32	3/16 19:00 ~ 20:00	島根県	Shimane (Matsue)	0.036
33	3/16 19:00 ~ 20:00	岡山県	Okayama (Okayama	0.048
34	3/16 19:00 ~ 20:00	広島県	Hiroshima (Hiroshin	0.046
35	3/16 19:00 ~ 20:00	山口県	Yamaguchi (Yamagı	0.092
36	3/16 19:00 ~ 20:00	徳島県	Tokushima (Tokush	0.038
37	3/16 19:00 ~ 20:00	香川県	Kagawa (Takamatsı	0.052
38	3/16 19:00 ~ 20:00	愛媛県	Ehime (Matsuyama)	0.048
39	3/16 19:00 ~ 20:00	高知県	Kochi (Kochi)	0.025
40	3/16 19:00 ~ 20:00	福岡県	Fukuoka (Dazaifu)	0.036
41	3/16 19:00 ~ 20:00	佐賀県	Saga (Saga)	0.04
42	3/16 19:00 ~ 20:00	長崎県	Nagasaki (Ohmura)	0.029
43	3/16 19:00 ~ 20:00	熊本県	Kumamoto (Uto)	0.027
44	3/16 19:00 ~ 20:00	大分県	Oita (Oita)	0.049
45	3/16 19:00 ~ 20:00	宮崎県	Miyazaki (Miyazaki)	0.026
46	3/16 19:00 ~ 20:00	鹿児島県	Kagoshima (Kagosh	0.034
47	3/16 19:00 ~ 20:00	沖縄県	Okinawa (Uruma)	0.021
1	3/16 21:00 ~ 22:00	北海道	Hokkaido (Sapporo)	0.027
2	3/16 21:00 ~ 22:00	青森県	Aomori (Aomori)	0.026
3	3/16 21:00 ~ 22:00	岩手県	Iwate (Morioka)	0.034
4	3/16 21:00 ~ 22:00	宮城県	Miyagi (Sendai)	0.151
5	3/16 21:00 ~ 22:00	秋田県	Akita (Akita)	0.04
6	3/16 21:00 ~ 22:00	山形県	Yamagata (Yamaga	0.055
7	3/16 21:00 ~ 22:00	福島県	Fukushima (Futaba-gun)	
8	3/16 21:00 ~ 22:00	茨城県	Ibaraki (Mito)	0.237
9	3/16 21:00 ~ 22:00	栃木県	Tochigi (Itsunomiya	0.211
10	3/16 21:00 ~ 22:00	群馬県	Gunma (Maebashi)	0.108
11	3/16 21:00 ~ 22:00	埼玉県	Saitama (Saitama)	0.067
12	3/16 21:00 ~ 22:00	千葉県	Chiba (Ichihara)	0.041
13	3/16 21:00 ~ 22:00	東京都	Tokyo (Shinjuku-kı	0.053
14	3/16 21:00 ~ 22:00	神奈川県	Kanagawa (Chigasa	0.055
15	3/16 21:00 ~ 22:00	新潟県	Niigata (Niigata)	0.047
16	3/16 21:00 ~ 22:00	富山県	Toyama (Imizu)	0.049
17	3/16 21:00 ~ 22:00	石川県	Ishikawa (Kanazawa	0.048
18	3/16 21:00 ~ 22:00	福井県	Fukui (Fukui)	0.046
19	3/16 21:00 ~ 22:00	山梨県	Yamanashi (Kofu)	0.045
20	3/16 21:00 ~ 22:00	長野県	Nagano (Nagano)	0.088
21	3/16 21:00 ~ 22:00	岐阜県	Gifu (Kakamigahara	0.061
22	3/16 21:00 ~ 22:00	静岡県	Shizuoka (Shizuoka	0.04
23	3/16 21:00 ~ 22:00	愛知県	Aichi (Nagoya)	0.04
24	3/16 21:00 ~ 22:00	三重県	Mie (Yokkaichi)	0.06
25	3/16 21:00 ~ 22:00	滋賀県	Shiga (Ohtsu)	0.036
26	3/16 21:00 ~ 22:00	京都府	Kyoto (Kyoto)	0.038
27	3/16 21:00 ~ 22:00	大阪府	Osaka (Osaka)	0.043
28	3/16 21:00 ~ 22:00	兵庫県	Hyogo (Kobe)	0.038
29	3/16 21:00 ~ 22:00	奈良県	Nara (Nara)	0.048
30	3/16 21:00 ~ 22:00	和歌山県	Wakayama (Wakaya	0.032
31	3/16 21:00 ~ 22:00	鳥取県	Tottori (Touhaku-g	0.064
32	3/16 21:00 ~ 22:00	島根県	Shimane (Matsue)	0.036

33	3/16 21:00 ~ 22:00	岡山県	Okayama (Okayama	0.049
34	3/16 21:00 ~ 22:00	広島県	Hiroshima (Hiroshin	0.047
35	3/16 21:00 ~ 22:00	山口県	Yamaguchi (Yamag	0.093
36	3/16 21:00 ~ 22:00	徳島県	Tokushima (Tokush	0.038
37	3/16 21:00 ~ 22:00	香川県	Kagawa (Takamatsı	0.052
38	3/16 21:00 ~ 22:00	愛媛県	Ehime (Matsuyama.	0.047
39	3/16 21:00 ~ 22:00	高知県	Kochi (Kochi)	0.025
40	3/16 21:00 ~ 22:00	福岡県	Fukuoka (Dazaifu)	0.036
41	3/16 21:00 ~ 22:00	佐賀県	Saga (Saga)	0.04
42	3/16 21:00 ~ 22:00	長崎県	Nagasaki (Ohmura)	0.03
43	3/16 21:00 ~ 22:00	熊本県	Kumamoto (Uto)	0.027
44	3/16 21:00 ~ 22:00	大分県	Oita (Oita)	0.05
45	3/16 21:00 ~ 22:00	宮崎県	Miyazaki (Miyazaki)	0.026
46	3/16 21:00 ~ 22:00	鹿児島県	Kagoshima (Kagosh	0.034
47	3/16 21:00 ~ 22:00	沖縄県	Okinawa (Uruma)	0.021
1	3/16 22:00 ~ 23:00	北海道	Hokkaido (Sapporo.	0.028
2	3/16 22:00 ~ 23:00	青森県	Aomori (Aomori)	0.024
3	3/16 22:00 ~ 23:00	岩手県	Iwate (Morioka)	0.033
4	3/16 22:00 ~ 23:00	宮城県	Miyagi (Sendai)	0.149
5	3/16 22:00 ~ 23:00	秋田県	Akita (Akita)	0.038
6	3/16 22:00 ~ 23:00	山形県	Yamagata (Yamaga	0.053
7	3/16 22:00 ~ 23:00	福島県	Fukushima (Futaba-gun)	
8	3/16 22:00 ~ 23:00	茨城県	Ibaraki (Mito)	0.235
9	3/16 22:00 ~ 23:00	栃木県	Tochigi (Itsunomiya	0.21
10	3/16 22:00 ~ 23:00	群馬県	Gunma (Maebashi)	0.108
11	3/16 22:00 ~ 23:00	埼玉県	Saitama (Saitama)	0.067
12	3/16 22:00 ~ 23:00	千葉県	Chiba (Ichihara)	0.04
13	3/16 22:00 ~ 23:00	東京都	Tokyo (Shinjuku-kı	0.053
14	3/16 22:00 ~ 23:00	神奈川県	Kanagawa (Chigasa	0.055
15	3/16 22:00 ~ 23:00	新潟県	Niigata (Niigata)	0.047
16	3/16 22:00 ~ 23:00	富山県	Toyama (Imizu)	0.05
17	3/16 22:00 ~ 23:00	石川県	Ishikawa (Kanazawa	0.051
18	3/16 22:00 ~ 23:00	福井県	Fukui (Fukui)	0.048
19	3/16 22:00 ~ 23:00	山梨県	Yamanashi (Kofu)	0.045
20	3/16 22:00 ~ 23:00	長野県	Nagano (Nagano)	0.089
21	3/16 22:00 ~ 23:00	岐阜県	Gifu (Kakamigahara	0.061
22	3/16 22:00 ~ 23:00	静岡県	Shizuoka (Shizuoka	0.04
23	3/16 22:00 ~ 23:00	愛知県	Aichi (Nagoya)	0.04
24	3/16 22:00 ~ 23:00	三重県	Mie (Yokkaichi)	0.057
25	3/16 22:00 ~ 23:00	滋賀県	Shiga (Ohtsu)	0.034
26	3/16 22:00 ~ 23:00	京都府	Kyoto (Kyoto)	0.038
27	3/16 22:00 ~ 23:00	大阪府	Osaka (Osaka)	0.043
28	3/16 22:00 ~ 23:00	兵庫県	Hyogo (Kobe)	0.038
29	3/16 22:00 ~ 23:00	奈良県	Nara (Nara)	0.047
30	3/16 22:00 ~ 23:00	和歌山県	Wakayama (Wakaya	0.032
31	3/16 22:00 ~ 23:00	鳥取県	Tottori (Touhaku-g	0.063
32	3/16 22:00 ~ 23:00	島根県	Shimane (Matsue)	0.036
33	3/16 22:00 ~ 23:00	岡山県	Okayama (Okayama	0.049
34	3/16 22:00 ~ 23:00	広島県	Hiroshima (Hiroshin	0.048
35	3/16 22:00 ~ 23:00	山口県	Yamaguchi (Yamag	0.094
36	3/16 22:00 ~ 23:00	徳島県	Tokushima (Tokush	0.038
37	3/16 22:00 ~ 23:00	香川県	Kagawa (Takamatsı	0.052
38	3/16 22:00 ~ 23:00	愛媛県	Ehime (Matsuyama.	0.048
39	3/16 22:00 ~ 23:00	高知県	Kochi (Kochi)	0.025
40	3/16 22:00 ~ 23:00	福岡県	Fukuoka (Dazaifu)	0.036
41	3/16 22:00 ~ 23:00	佐賀県	Saga (Saga)	0.04
42	3/16 22:00 ~ 23:00	長崎県	Nagasaki (Ohmura)	0.029

43	3/16 22:00 ~ 23:00	熊本県	Kumamoto (Uto)	0.027
44	3/16 22:00 ~ 23:00	大分県	Oita (Oita)	0.05
45	3/16 22:00 ~ 23:00	宮崎県	Miyazaki (Miyazaki)	0.027
46	3/16 22:00 ~ 23:00	鹿児島県	Kagoshima (Kagosh	0.034
47	3/16 22:00 ~ 23:00	沖縄県	Okinawa (Uruma)	0.021
1	3/16 23:00 ~ 24:00	北海道	Hokkaido (Sapporo)	0.028
2	3/16 23:00 ~ 24:00	青森県	Aomori (Aomori)	0.028
3	3/16 23:00 ~ 24:00	岩手県	Iwate (Morioka)	0.034
4	3/16 23:00 ~ 24:00	宮城県	Miyagi (Sendai)	0.148
5	3/16 23:00 ~ 24:00	秋田県	Akita (Akita)	0.039
6	3/16 23:00 ~ 24:00	山形県	Yamagata (Yamaga	0.051
7	3/16 23:00 ~ 24:00	福島県	Fukushima (Futaba-gun)	
8	3/16 23:00 ~ 24:00	茨城県	Ibaraki (Mito)	0.233
9	3/16 23:00 ~ 24:00	栃木県	Tochigi (Itsunomiya	0.208
10	3/16 23:00 ~ 24:00	群馬県	Gunma (Maebashi)	0.107
11	3/16 23:00 ~ 24:00	埼玉県	Saitama (Saitama)	0.067
12	3/16 23:00 ~ 24:00	千葉県	Chiba (Ichihara)	0.04
13	3/16 23:00 ~ 24:00	東京都	Tokyo (Shinjuku-ku	0.053
14	3/16 23:00 ~ 24:00	神奈川県	Kanagawa (Chigasa	0.055
15	3/16 23:00 ~ 24:00	新潟県	Niigata (Niigata)	0.047
16	3/16 23:00 ~ 24:00	富山県	Toyama (Imizu)	0.055
17	3/16 23:00 ~ 24:00	石川県	Ishikawa (Kanazawa	0.053
18	3/16 23:00 ~ 24:00	福井県	Fukui (Fukui)	0.049
19	3/16 23:00 ~ 24:00	山梨県	Yamanashi (Kofu)	0.045
20	3/16 23:00 ~ 24:00	長野県	Nagano (Nagano)	0.087
21	3/16 23:00 ~ 24:00	岐阜県	Gifu (Kakamigahara	0.06
22	3/16 23:00 ~ 24:00	静岡県	Shizuoka (Shizuoka	0.039
23	3/16 23:00 ~ 24:00	愛知県	Aichi (Nagoya)	0.04
24	3/16 23:00 ~ 24:00	三重県	Mie (Yokkaichi)	0.055
25	3/16 23:00 ~ 24:00	滋賀県	Shiga (Ohtsu)	0.033
26	3/16 23:00 ~ 24:00	京都府	Kyoto (Kyoto)	0.038
27	3/16 23:00 ~ 24:00	大阪府	Osaka (Osaka)	0.043
28	3/16 23:00 ~ 24:00	兵庫県	Hyogo (Kobe)	0.039
29	3/16 23:00 ~ 24:00	奈良県	Nara (Nara)	0.047
30	3/16 23:00 ~ 24:00	和歌山県	Wakayama (Wakaya	0.032
31	3/16 23:00 ~ 24:00	鳥取県	Tottori (Touhaku-g	0.063
32	3/16 23:00 ~ 24:00	島根県	Shimane (Matsue)	0.036
33	3/16 23:00 ~ 24:00	岡山県	Okayama (Okayama	0.049
34	3/16 23:00 ~ 24:00	広島県	Hiroshima (Hiroshin	0.048
35	3/16 23:00 ~ 24:00	山口県	Yamaguchi (Yamagu	0.095
36	3/16 23:00 ~ 24:00	徳島県	Tokushima (Tokush	0.038
37	3/16 23:00 ~ 24:00	香川県	Kagawa (Takamatsu	0.052
38	3/16 23:00 ~ 24:00	愛媛県	Ehime (Matsuyama)	0.049
39	3/16 23:00 ~ 24:00	高知県	Kochi (Kochi)	0.025
40	3/16 23:00 ~ 24:00	福岡県	Fukuoka (Dazaifu)	0.036
41	3/16 23:00 ~ 24:00	佐賀県	Saga (Saga)	0.04
42	3/16 23:00 ~ 24:00	長崎県	Nagasaki (Ohmura)	0.029
43	3/16 23:00 ~ 24:00	熊本県	Kumamoto (Uto)	0.027
44	3/16 23:00 ~ 24:00	大分県	Oita (Oita)	0.05
45	3/16 23:00 ~ 24:00	宮崎県	Miyazaki (Miyazaki)	0.027
46	3/16 23:00 ~ 24:00	鹿児島県	Kagoshima (Kagosh	0.035
47	3/16 23:00 ~ 24:00	沖縄県	Okinawa (Uruma)	0.021
1	3/17 00:00 ~ 01:00	北海道	Hokkaido (Sapporo)	0.028
2	3/17 00:00 ~ 01:00	青森県	Aomori (Aomori)	0.026
3	3/17 00:00 ~ 01:00	岩手県	Iwate (Morioka)	0.036
4	3/17 00:00 ~ 01:00	宮城県	Miyagi (Sendai)	0.147
5	3/17 00:00 ~ 01:00	秋田県	Akita (Akita)	0.042

6	3/17 00:00 ~ 01:00	山形県	Yamagata (Yamaga	0.05
7	3/17 00:00 ~ 01:00	福島県	Fukushima (Futaba-gun)	
8	3/17 00:00 ~ 01:00	茨城県	Ibaraki (Mito)	0.232
9	3/17 00:00 ~ 01:00	栃木県	Tochigi (Itsunomiya	0.208
10	3/17 00:00 ~ 01:00	群馬県	Gunma (Maebashi)	0.106
11	3/17 00:00 ~ 01:00	埼玉県	Saitama (Saitama)	0.067
12	3/17 00:00 ~ 01:00	千葉県	Chiba (Ichihara)	0.04
13	3/17 00:00 ~ 01:00	東京都	Tokyo (Shinjuku-ku	0.053
14	3/17 00:00 ~ 01:00	神奈川県	Kanagawa (Chigasa	0.055
15	3/17 00:00 ~ 01:00	新潟県	Niigata (Niigata)	0.047
16	3/17 00:00 ~ 01:00	富山県	Toyama (Imizu)	0.056
17	3/17 00:00 ~ 01:00	石川県	Ishikawa (Kanazawa	0.052
18	3/17 00:00 ~ 01:00	福井県	Fukui (Fukui)	0.051
19	3/17 00:00 ~ 01:00	山梨県	Yamanashi (Kofu)	0.045
20	3/17 00:00 ~ 01:00	長野県	Nagano (Nagano)	0.086
21	3/17 00:00 ~ 01:00	岐阜県	Gifu (Kakamigahara	0.061
22	3/17 00:00 ~ 01:00	静岡県	Shizuoka (Shizuoka	0.039
23	3/17 00:00 ~ 01:00	愛知県	Aichi (Nagoya)	0.04
24	3/17 00:00 ~ 01:00	三重県	Mie (Yokkaichi)	0.052
25	3/17 00:00 ~ 01:00	滋賀県	Shiga (Ohtsu)	0.033
26	3/17 00:00 ~ 01:00	京都府	Kyoto (Kyoto)	0.04
27	3/17 00:00 ~ 01:00	大阪府	Osaka (Osaka)	0.043
28	3/17 00:00 ~ 01:00	兵庫県	Hyogo (Kobe)	0.038
29	3/17 00:00 ~ 01:00	奈良県	Nara (Nara)	0.048
30	3/17 00:00 ~ 01:00	和歌山県	Wakayama (Wakaya	0.032
31	3/17 00:00 ~ 01:00	鳥取県	Tottori (Touhaku-g	0.063
32	3/17 00:00 ~ 01:00	島根県	Shimane (Matsue)	0.036
33	3/17 00:00 ~ 01:00	岡山県	Okayama (Okayama	0.049
34	3/17 00:00 ~ 01:00	広島県	Hiroshima (Hiroshin	0.049
35	3/17 00:00 ~ 01:00	山口県	Yamaguchi (Yamagu	0.096
36	3/17 00:00 ~ 01:00	徳島県	Tokushima (Tokush	0.038
37	3/17 00:00 ~ 01:00	香川県	Kagawa (Takamatsu	0.052
38	3/17 00:00 ~ 01:00	愛媛県	Ehime (Matsuyama)	0.05
39	3/17 00:00 ~ 01:00	高知県	Kochi (Kochi)	0.026
40	3/17 00:00 ~ 01:00	福岡県	Fukuoka (Dazaifu)	0.037
41	3/17 00:00 ~ 01:00	佐賀県	Saga (Saga)	0.041
42	3/17 00:00 ~ 01:00	長崎県	Nagasaki (Ohmura)	0.029
43	3/17 00:00 ~ 01:00	熊本県	Kumamoto (Uto)	0.028
44	3/17 00:00 ~ 01:00	大分県	Oita (Oita)	0.05
45	3/17 00:00 ~ 01:00	宮崎県	Miyazaki (Miyazaki)	0.027
46	3/17 00:00 ~ 01:00	鹿児島県	Kagoshima (Kagosh	0.036
47	3/17 00:00 ~ 01:00	沖縄県	Okinawa (Uruma)	0.021
1	3/17 01:00 ~ 02:00	北海道	Hokkaido (Sapporo)	0.028
2	3/17 01:00 ~ 02:00	青森県	Aomori (Aomori)	0.022
3	3/17 01:00 ~ 02:00	岩手県	Iwate (Morioka)	0.041
4	3/17 01:00 ~ 02:00	宮城県	Miyagi (Sendai)	0.146
5	3/17 01:00 ~ 02:00	秋田県	Akita (Akita)	0.044
6	3/17 01:00 ~ 02:00	山形県	Yamagata (Yamaga	0.05
7	3/17 01:00 ~ 02:00	福島県	Fukushima (Futaba-gun)	
8	3/17 01:00 ~ 02:00	茨城県	Ibaraki (Mito)	0.231
9	3/17 01:00 ~ 02:00	栃木県	Tochigi (Itsunomiya	0.207
10	3/17 01:00 ~ 02:00	群馬県	Gunma (Maebashi)	0.106
11	3/17 01:00 ~ 02:00	埼玉県	Saitama (Saitama)	0.066
12	3/17 01:00 ~ 02:00	千葉県	Chiba (Ichihara)	0.039
13	3/17 01:00 ~ 02:00	東京都	Tokyo (Shinjuku-ku	0.053
14	3/17 01:00 ~ 02:00	神奈川県	Kanagawa (Chigasa	0.055
15	3/17 01:00 ~ 02:00	新潟県	Niigata (Niigata)	0.047

http://www.mext.go.jp/component/a_menu/other/detail/_icsFiles/afieldfile/2011/03/15/1303577_05_1.pd
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16	3/17 01:00 ~ 02:00	富山県	Toyama (Imizu)	0.051
17	3/17 01:00 ~ 02:00	石川県	Ishikawa (Kanazawa	0.049
18	3/17 01:00 ~ 02:00	福井県	Fukui (Fukui)	0.048
19	3/17 01:00 ~ 02:00	山梨県	Yamanashi (Kofu)	0.045
20	3/17 01:00 ~ 02:00	長野県	Nagano (Nagano)	0.086
21	3/17 01:00 ~ 02:00	岐阜県	Gifu (Kakamigahara	0.061
22	3/17 01:00 ~ 02:00	静岡県	Shizuoka (Shizuoka	0.039
23	3/17 01:00 ~ 02:00	愛知県	Aichi (Nagoya)	0.04
24	3/17 01:00 ~ 02:00	三重県	Mie (Yokkaichi)	0.052
25	3/17 01:00 ~ 02:00	滋賀県	Shiga (Ohtsu)	0.033
26	3/17 01:00 ~ 02:00	京都府	Kyoto (Kyoto)	0.039
27	3/17 01:00 ~ 02:00	大阪府	Osaka (Osaka)	0.043
28	3/17 01:00 ~ 02:00	兵庫県	Hyogo (Kobe)	0.038
29	3/17 01:00 ~ 02:00	奈良県	Nara (Nara)	0.047
30	3/17 01:00 ~ 02:00	和歌山県	Wakayama (Wakaya	0.031
31	3/17 01:00 ~ 02:00	鳥取県	Tottori (Touhaku-g	0.063
32	3/17 01:00 ~ 02:00	島根県	Shimane (Matsue)	0.037
33	3/17 01:00 ~ 02:00	岡山県	Okayama (Okayama	0.049
34	3/17 01:00 ~ 02:00	広島県	Hiroshima (Hiroshin	0.049
35	3/17 01:00 ~ 02:00	山口県	Yamaguchi (Yamagu	0.096
36	3/17 01:00 ~ 02:00	徳島県	Tokushima (Tokush	0.038
37	3/17 01:00 ~ 02:00	香川県	Kagawa (Takamatsu	0.052
38	3/17 01:00 ~ 02:00	愛媛県	Ehime (Matsuyama)	0.049
39	3/17 01:00 ~ 02:00	高知県	Kochi (Kochi)	0.026
40	3/17 01:00 ~ 02:00	福岡県	Fukuoka (Dazaifu)	0.037
41	3/17 01:00 ~ 02:00	佐賀県	Saga (Saga)	0.041
42	3/17 01:00 ~ 02:00	長崎県	Nagasaki (Ohmura)	0.029
43	3/17 01:00 ~ 02:00	熊本県	Kumamoto (Uto)	0.028
44	3/17 01:00 ~ 02:00	大分県	Oita (Oita)	0.05
45	3/17 01:00 ~ 02:00	宮崎県	Miyazaki (Miyazaki)	0.026
46	3/17 01:00 ~ 02:00	鹿児島県	Kagoshima (Kagosh	0.036
47	3/17 01:00 ~ 02:00	沖縄県	Okinawa (Uruma)	0.021
1	3/17 02:00 ~ 03:00	北海道	Hokkaido (Sapporo)	0.028
2	3/17 02:00 ~ 03:00	青森県	Aomori (Aomori)	0.02
3	3/17 02:00 ~ 03:00	岩手県	Iwate (Morioka)	0.045
4	3/17 02:00 ~ 03:00	宮城県	Miyagi (Sendai)	0.145
5	3/17 02:00 ~ 03:00	秋田県	Akita (Akita)	0.048
6	3/17 02:00 ~ 03:00	山形県	Yamagata (Yamaga	0.05
7	3/17 02:00 ~ 03:00	福島県	Fukushima (Futaba-gun)	
8	3/17 02:00 ~ 03:00	茨城県	Ibaraki (Mito)	0.23
9	3/17 02:00 ~ 03:00	栃木県	Tochigi (Itsunomiya	0.205
10	3/17 02:00 ~ 03:00	群馬県	Gunma (Maebashi)	0.105
11	3/17 02:00 ~ 03:00	埼玉県	Saitama (Saitama)	0.066
12	3/17 02:00 ~ 03:00	千葉県	Chiba (Ichihara)	0.039
13	3/17 02:00 ~ 03:00	東京都	Tokyo (Shinjuku-ku	0.052
14	3/17 02:00 ~ 03:00	神奈川県	Kanagawa (Chigasa	0.055
15	3/17 02:00 ~ 03:00	新潟県	Niigata (Niigata)	0.048
16	3/17 02:00 ~ 03:00	富山県	Toyama (Imizu)	0.05
17	3/17 02:00 ~ 03:00	石川県	Ishikawa (Kanazawa	0.048
18	3/17 02:00 ~ 03:00	福井県	Fukui (Fukui)	0.048
19	3/17 02:00 ~ 03:00	山梨県	Yamanashi (Kofu)	0.045
20	3/17 02:00 ~ 03:00	長野県	Nagano (Nagano)	0.085
21	3/17 02:00 ~ 03:00	岐阜県	Gifu (Kakamigahara	0.061
22	3/17 02:00 ~ 03:00	静岡県	Shizuoka (Shizuoka	0.039
23	3/17 02:00 ~ 03:00	愛知県	Aichi (Nagoya)	0.04
24	3/17 02:00 ~ 03:00	三重県	Mie (Yokkaichi)	0.056
25	3/17 02:00 ~ 03:00	滋賀県	Shiga (Ohtsu)	0.032

26	3/17 02:00 ~ 03:00	京都府	Kyoto (Kyoto)	0.038
27	3/17 02:00 ~ 03:00	大阪府	Osaka (Osaka)	0.043
28	3/17 02:00 ~ 03:00	兵庫県	Hyogo (Kobe)	0.037
29	3/17 02:00 ~ 03:00	奈良県	Nara (Nara)	0.047
30	3/17 02:00 ~ 03:00	和歌山県	Wakayama (Wakaya	0.031
31	3/17 02:00 ~ 03:00	鳥取県	Tottori (Touhaku-g	0.064
32	3/17 02:00 ~ 03:00	島根県	Shimane (Matsue)	0.037
33	3/17 02:00 ~ 03:00	岡山県	Okayama (Okayama	0.049
34	3/17 02:00 ~ 03:00	広島県	Hiroshima (Hiroshin	0.049
35	3/17 02:00 ~ 03:00	山口県	Yamaguchi (Yamagı	0.095
36	3/17 02:00 ~ 03:00	徳島県	Tokushima (Tokush	0.038
37	3/17 02:00 ~ 03:00	香川県	Kagawa (Takamatsı	0.052
38	3/17 02:00 ~ 03:00	愛媛県	Ehime (Matsuyama)	0.05
39	3/17 02:00 ~ 03:00	高知県	Kochi (Kochi)	0.026
40	3/17 02:00 ~ 03:00	福岡県	Fukuoka (Dazaifu)	0.037
41	3/17 02:00 ~ 03:00	佐賀県	Saga (Saga)	0.041
42	3/17 02:00 ~ 03:00	長崎県	Nagasaki (Ohmura)	0.029
43	3/17 02:00 ~ 03:00	熊本県	Kumamoto (Uto)	0.028
44	3/17 02:00 ~ 03:00	大分県	Oita (Oita)	0.05
45	3/17 02:00 ~ 03:00	宮崎県	Miyazaki (Miyazaki)	0.027
46	3/17 02:00 ~ 03:00	鹿児島県	Kagoshima (Kagosh	0.035
47	3/17 02:00 ~ 03:00	沖縄県	Okinawa (Uruma)	0.021
1	3/17 03:00 ~ 04:00	北海道	Hokkaido (Sapporo)	0.029
2	3/17 03:00 ~ 04:00	青森県	Aomori (Aomori)	0.026
3	3/17 03:00 ~ 04:00	岩手県	Iwate (Morioka)	0.048
4	3/17 03:00 ~ 04:00	宮城県	Miyagi (Sendai)	0.144
5	3/17 03:00 ~ 04:00	秋田県	Akita (Akita)	0.047
6	3/17 03:00 ~ 04:00	山形県	Yamagata (Yamaga	0.054
7	3/17 03:00 ~ 04:00	福島県	Fukushima (Futaba-gun)	
8	3/17 03:00 ~ 04:00	茨城県	Ibaraki (Mito)	0.228
9	3/17 03:00 ~ 04:00	栃木県	Tochigi (Itsunomiya	0.203
10	3/17 03:00 ~ 04:00	群馬県	Gunma (Maebashi)	0.104
11	3/17 03:00 ~ 04:00	埼玉県	Saitama (Saitama)	0.066
12	3/17 03:00 ~ 04:00	千葉県	Chiba (Ichihara)	0.039
13	3/17 03:00 ~ 04:00	東京都	Tokyo (Shinjuku-kı	0.052
14	3/17 03:00 ~ 04:00	神奈川県	Kanagawa (Chigasa	0.054
15	3/17 03:00 ~ 04:00	新潟県	Niigata (Niigata)	0.048
16	3/17 03:00 ~ 04:00	富山県	Toyama (Imizu)	0.049
17	3/17 03:00 ~ 04:00	石川県	Ishikawa (Kanazawa	0.047
18	3/17 03:00 ~ 04:00	福井県	Fukui (Fukui)	0.046
19	3/17 03:00 ~ 04:00	山梨県	Yamanashi (Kofu)	0.045
20	3/17 03:00 ~ 04:00	長野県	Nagano (Nagano)	0.085
21	3/17 03:00 ~ 04:00	岐阜県	Gifu (Kakamigahara	0.061
22	3/17 03:00 ~ 04:00	静岡県	Shizuoka (Shizuoka	0.039
23	3/17 03:00 ~ 04:00	愛知県	Aichi (Nagoya)	0.039
24	3/17 03:00 ~ 04:00	三重県	Mie (Yokkaichi)	0.052
25	3/17 03:00 ~ 04:00	滋賀県	Shiga (Ohtsu)	0.033
26	3/17 03:00 ~ 04:00	京都府	Kyoto (Kyoto)	0.038
27	3/17 03:00 ~ 04:00	大阪府	Osaka (Osaka)	0.042
28	3/17 03:00 ~ 04:00	兵庫県	Hyogo (Kobe)	0.036
29	3/17 03:00 ~ 04:00	奈良県	Nara (Nara)	0.047
30	3/17 03:00 ~ 04:00	和歌山県	Wakayama (Wakaya	0.032
31	3/17 03:00 ~ 04:00	鳥取県	Tottori (Touhaku-g	0.069
32	3/17 03:00 ~ 04:00	島根県	Shimane (Matsue)	0.038
33	3/17 03:00 ~ 04:00	岡山県	Okayama (Okayama	0.05
34	3/17 03:00 ~ 04:00	広島県	Hiroshima (Hiroshin	0.049
35	3/17 03:00 ~ 04:00	山口県	Yamaguchi (Yamagı	0.096

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36	3/17 03:00 ~ 04:00	徳島県	Tokushima (Tokush	0.038
37	3/17 03:00 ~ 04:00	香川県	Kagawa (Takamatsı	0.052
38	3/17 03:00 ~ 04:00	愛媛県	Ehime (Matsuyama)	0.05
39	3/17 03:00 ~ 04:00	高知県	Kochi (Kochi)	0.026
40	3/17 03:00 ~ 04:00	福岡県	Fukuoka (Dazaifu)	0.037
41	3/17 03:00 ~ 04:00	佐賀県	Saga (Saga)	0.041
42	3/17 03:00 ~ 04:00	長崎県	Nagasaki (Ohmura)	0.029
43	3/17 03:00 ~ 04:00	熊本県	Kumamoto (Uto)	0.027
44	3/17 03:00 ~ 04:00	大分県	Oita (Oita)	0.05
45	3/17 03:00 ~ 04:00	宮崎県	Miyazaki (Miyazaki)	0.027
46	3/17 03:00 ~ 04:00	鹿児島県	Kagoshima (Kagosh	0.035
47	3/17 03:00 ~ 04:00	沖縄県	Okinawa (Uruma)	0.021
1	3/17 04:00 ~ 05:00	北海道	Hokkaido (Sapporo)	0.031
2	3/17 04:00 ~ 05:00	青森県	Aomori (Aomori)	0.023
3	3/17 04:00 ~ 05:00	岩手県	Iwate (Morioka)	0.043
4	3/17 04:00 ~ 05:00	宮城県	Miyagi (Sendai)	0.143
5	3/17 04:00 ~ 05:00	秋田県	Akita (Akita)	0.04
6	3/17 04:00 ~ 05:00	山形県	Yamagata (Yamaga	0.056
7	3/17 04:00 ~ 05:00	福島県	Fukushima (Futaba-gun)	
8	3/17 04:00 ~ 05:00	茨城県	Ibaraki (Mito)	0.226
9	3/17 04:00 ~ 05:00	栃木県	Tochigi (Itsunomiya	0.203
10	3/17 04:00 ~ 05:00	群馬県	Gunma (Maebashi)	0.104
11	3/17 04:00 ~ 05:00	埼玉県	Saitama (Saitama)	0.066
12	3/17 04:00 ~ 05:00	千葉県	Chiba (Ichihara)	0.039
13	3/17 04:00 ~ 05:00	東京都	Tokyo (Shinjuku-kı	0.052
14	3/17 04:00 ~ 05:00	神奈川県	Kanagawa (Chigasa	0.054
15	3/17 04:00 ~ 05:00	新潟県	Niigata (Niigata)	0.048
16	3/17 04:00 ~ 05:00	富山県	Toyama (Imizu)	0.051
17	3/17 04:00 ~ 05:00	石川県	Ishikawa (Kanazawa	0.047
18	3/17 04:00 ~ 05:00	福井県	Fukui (Fukui)	0.049
19	3/17 04:00 ~ 05:00	山梨県	Yamanashi (Kofu)	0.044
20	3/17 04:00 ~ 05:00	長野県	Nagano (Nagano)	0.085
21	3/17 04:00 ~ 05:00	岐阜県	Gifu (Kakamigahara	0.061
22	3/17 04:00 ~ 05:00	静岡県	Shizuoka (Shizuoka	0.039
23	3/17 04:00 ~ 05:00	愛知県	Aichi (Nagoya)	0.039
24	3/17 04:00 ~ 05:00	三重県	Mie (Yokkaichi)	0.049
25	3/17 04:00 ~ 05:00	滋賀県	Shiga (Ohtsu)	0.033
26	3/17 04:00 ~ 05:00	京都府	Kyoto (Kyoto)	0.038
27	3/17 04:00 ~ 05:00	大阪府	Osaka (Osaka)	0.042
28	3/17 04:00 ~ 05:00	兵庫県	Hyogo (Kobe)	0.037
29	3/17 04:00 ~ 05:00	奈良県	Nara (Nara)	0.047
30	3/17 04:00 ~ 05:00	和歌山県	Wakayama (Wakaya	0.032
31	3/17 04:00 ~ 05:00	鳥取県	Tottori (Touhaku-g	0.071
32	3/17 04:00 ~ 05:00	島根県	Shimane (Matsue)	0.038
33	3/17 04:00 ~ 05:00	岡山県	Okayama (Okayama	0.05
34	3/17 04:00 ~ 05:00	広島県	Hiroshima (Hiroshin	0.05
35	3/17 04:00 ~ 05:00	山口県	Yamaguchi (Yamagı	0.098
36	3/17 04:00 ~ 05:00	徳島県	Tokushima (Tokush	0.037
37	3/17 04:00 ~ 05:00	香川県	Kagawa (Takamatsı	0.052
38	3/17 04:00 ~ 05:00	愛媛県	Ehime (Matsuyama)	0.05
39	3/17 04:00 ~ 05:00	高知県	Kochi (Kochi)	0.026
40	3/17 04:00 ~ 05:00	福岡県	Fukuoka (Dazaifu)	0.037
41	3/17 04:00 ~ 05:00	佐賀県	Saga (Saga)	0.041
42	3/17 04:00 ~ 05:00	長崎県	Nagasaki (Ohmura)	0.029
43	3/17 04:00 ~ 05:00	熊本県	Kumamoto (Uto)	0.027
44	3/17 04:00 ~ 05:00	大分県	Oita (Oita)	0.05
45	3/17 04:00 ~ 05:00	宮崎県	Miyazaki (Miyazaki)	0.027

46	3/17 04:00 ~ 05:00	鹿児島県	Kagoshima (Kagosh	0.035
47	3/17 04:00 ~ 05:00	沖縄県	Okinawa (Uruma)	0.021
1	3/17 05:00 ~ 06:00	北海道	Hokkaido (Sapporo)	0.031
2	3/17 05:00 ~ 06:00	青森県	Aomori (Aomori)	0.021
3	3/17 05:00 ~ 06:00	岩手県	Iwate (Morioka)	0.036
4	3/17 05:00 ~ 06:00	宮城県	Miyagi (Sendai)	0.141
5	3/17 05:00 ~ 06:00	秋田県	Akita (Akita)	0.036
6	3/17 05:00 ~ 06:00	山形県	Yamagata (Yamaga	0.051
7	3/17 05:00 ~ 06:00	福島県	Fukushima (Futaba-gun)	
8	3/17 05:00 ~ 06:00	茨城県	Ibaraki (Mito)	0.225
9	3/17 05:00 ~ 06:00	栃木県	Tochigi (Itsunomiya	0.201
10	3/17 05:00 ~ 06:00	群馬県	Gunma (Maebashi)	0.103
11	3/17 05:00 ~ 06:00	埼玉県	Saitama (Saitama)	0.065
12	3/17 05:00 ~ 06:00	千葉県	Chiba (Ichihara)	0.038
13	3/17 05:00 ~ 06:00	東京都	Tokyo (Shinjuku-ku	0.052
14	3/17 05:00 ~ 06:00	神奈川県	Kanagawa (Chigasa	0.054
15	3/17 05:00 ~ 06:00	新潟県	Niigata (Niigata)	0.048
16	3/17 05:00 ~ 06:00	富山県	Toyama (Imizu)	0.055
17	3/17 05:00 ~ 06:00	石川県	Ishikawa (Kanazawa	0.047
18	3/17 05:00 ~ 06:00	福井県	Fukui (Fukui)	0.052
19	3/17 05:00 ~ 06:00	山梨県	Yamanashi (Kofu)	0.044
20	3/17 05:00 ~ 06:00	長野県	Nagano (Nagano)	0.085
21	3/17 05:00 ~ 06:00	岐阜県	Gifu (Kakamigahara	0.061
22	3/17 05:00 ~ 06:00	静岡県	Shizuoka (Shizuoka	0.039
23	3/17 05:00 ~ 06:00	愛知県	Aichi (Nagoya)	0.039
24	3/17 05:00 ~ 06:00	三重県	Mie (Yokkaichi)	0.048
25	3/17 05:00 ~ 06:00	滋賀県	Shiga (Ohtsu)	0.033
26	3/17 05:00 ~ 06:00	京都府	Kyoto (Kyoto)	0.038
27	3/17 05:00 ~ 06:00	大阪府	Osaka (Osaka)	0.043
28	3/17 05:00 ~ 06:00	兵庫県	Hyogo (Kobe)	0.037
29	3/17 05:00 ~ 06:00	奈良県	Nara (Nara)	0.047
30	3/17 05:00 ~ 06:00	和歌山県	Wakayama (Wakaya	0.032
31	3/17 05:00 ~ 06:00	鳥取県	Tottori (Touhaku-g	0.071
32	3/17 05:00 ~ 06:00	島根県	Shimane (Matsue)	0.037
33	3/17 05:00 ~ 06:00	岡山県	Okayama (Okayama	0.05
34	3/17 05:00 ~ 06:00	広島県	Hiroshima (Hiroshin	0.049
35	3/17 05:00 ~ 06:00	山口県	Yamaguchi (Yamagu	0.099
36	3/17 05:00 ~ 06:00	徳島県	Tokushima (Tokush	0.038
37	3/17 05:00 ~ 06:00	香川県	Kagawa (Takamatsu	0.052
38	3/17 05:00 ~ 06:00	愛媛県	Ehime (Matsuyama)	0.051
39	3/17 05:00 ~ 06:00	高知県	Kochi (Kochi)	0.027
40	3/17 05:00 ~ 06:00	福岡県	Fukuoka (Dazaifu)	0.037
41	3/17 05:00 ~ 06:00	佐賀県	Saga (Saga)	0.041
42	3/17 05:00 ~ 06:00	長崎県	Nagasaki (Ohmura)	0.029
43	3/17 05:00 ~ 06:00	熊本県	Kumamoto (Uto)	0.027
44	3/17 05:00 ~ 06:00	大分県	Oita (Oita)	0.05
45	3/17 05:00 ~ 06:00	宮崎県	Miyazaki (Miyazaki)	0.027
46	3/17 05:00 ~ 06:00	鹿児島県	Kagoshima (Kagosh	0.035
47	3/17 05:00 ~ 06:00	沖縄県	Okinawa (Uruma)	0.021
1	3/17 06:00 ~ 07:00	北海道	Hokkaido (Sapporo)	0.03
2	3/17 06:00 ~ 07:00	青森県	Aomori (Aomori)	0.02
3	3/17 06:00 ~ 07:00	岩手県	Iwate (Morioka)	0.033
4	3/17 06:00 ~ 07:00	宮城県	Miyagi (Sendai)	0.14
5	3/17 06:00 ~ 07:00	秋田県	Akita (Akita)	0.034
6	3/17 06:00 ~ 07:00	山形県	Yamagata (Yamaga	0.055
7	3/17 06:00 ~ 07:00	福島県	Fukushima (Futaba-gun)	
8	3/17 06:00 ~ 07:00	茨城県	Ibaraki (Mito)	0.225

9	3/17 06:00 ~ 07:00	栃木県	Tochigi (Itsunomiya	0.2
10	3/17 06:00 ~ 07:00	群馬県	Gunma (Maebashi)	0.102
11	3/17 06:00 ~ 07:00	埼玉県	Saitama (Saitama)	0.065
12	3/17 06:00 ~ 07:00	千葉県	Chiba (Ichihara)	0.038
13	3/17 06:00 ~ 07:00	東京都	Tokyo (Shinjuku-ku	0.052
14	3/17 06:00 ~ 07:00	神奈川県	Kanagawa (Chigasa	0.054
15	3/17 06:00 ~ 07:00	新潟県	Niigata (Niigata)	0.047
16	3/17 06:00 ~ 07:00	富山県	Toyama (Imizu)	0.051
17	3/17 06:00 ~ 07:00	石川県	Ishikawa (Kanazawa	0.048
18	3/17 06:00 ~ 07:00	福井県	Fukui (Fukui)	0.048
19	3/17 06:00 ~ 07:00	山梨県	Yamanashi (Kofu)	0.044
20	3/17 06:00 ~ 07:00	長野県	Nagano (Nagano)	0.085
21	3/17 06:00 ~ 07:00	岐阜県	Gifu (Kakamigahara	0.061
22	3/17 06:00 ~ 07:00	静岡県	Shizuoka (Shizuoka	0.039
23	3/17 06:00 ~ 07:00	愛知県	Aichi (Nagoya)	0.039
24	3/17 06:00 ~ 07:00	三重県	Mie (Yokkaichi)	0.047
25	3/17 06:00 ~ 07:00	滋賀県	Shiga (Ohtsu)	0.033
26	3/17 06:00 ~ 07:00	京都府	Kyoto (Kyoto)	0.038
27	3/17 06:00 ~ 07:00	大阪府	Osaka (Osaka)	0.043
28	3/17 06:00 ~ 07:00	兵庫県	Hyogo (Kobe)	0.037
29	3/17 06:00 ~ 07:00	奈良県	Nara (Nara)	0.047
30	3/17 06:00 ~ 07:00	和歌山県	Wakayama (Wakaya	0.032
31	3/17 06:00 ~ 07:00	鳥取県	Tottori (Touhaku-g	0.069
32	3/17 06:00 ~ 07:00	島根県	Shimane (Matsue)	0.038
33	3/17 06:00 ~ 07:00	岡山県	Okayama (Okayama	0.051
34	3/17 06:00 ~ 07:00	広島県	Hiroshima (Hiroshin	0.049
35	3/17 06:00 ~ 07:00	山口県	Yamaguchi (Yamagu	0.098
36	3/17 06:00 ~ 07:00	徳島県	Tokushima (Tokush	0.038
37	3/17 06:00 ~ 07:00	香川県	Kagawa (Takamatsu	0.052
38	3/17 06:00 ~ 07:00	愛媛県	Ehime (Matsuyama)	0.05
39	3/17 06:00 ~ 07:00	高知県	Kochi (Kochi)	0.027
40	3/17 06:00 ~ 07:00	福岡県	Fukuoka (Dazaifu)	0.036
41	3/17 06:00 ~ 07:00	佐賀県	Saga (Saga)	0.04
42	3/17 06:00 ~ 07:00	長崎県	Nagasaki (Ohmura)	0.029
43	3/17 06:00 ~ 07:00	熊本県	Kumamoto (Uto)	0.027
44	3/17 06:00 ~ 07:00	大分県	Oita (Oita)	0.05
45	3/17 06:00 ~ 07:00	宮崎県	Miyazaki (Miyazaki)	0.026
46	3/17 06:00 ~ 07:00	鹿児島県	Kagoshima (Kagosh	0.034
47	3/17 06:00 ~ 07:00	沖縄県	Okinawa (Uruma)	0.021
1	3/17 07:00 ~ 08:00	北海道	Hokkaido (Sapporo)	0.03
2	3/17 07:00 ~ 08:00	青森県	Aomori (Aomori)	0.02
3	3/17 07:00 ~ 08:00	岩手県	Iwate (Morioka)	0.032
4	3/17 07:00 ~ 08:00	宮城県	Miyagi (Sendai)	0.131
5	3/17 07:00 ~ 08:00	秋田県	Akita (Akita)	0.034
6	3/17 07:00 ~ 08:00	山形県	Yamagata (Yamaga	0.054
7	3/17 07:00 ~ 08:00	福島県	Fukushima (Futaba-gun)	
8	3/17 07:00 ~ 08:00	茨城県	Ibaraki (Mito)	0.224
9	3/17 07:00 ~ 08:00	栃木県	Tochigi (Itsunomiya	0.199
10	3/17 07:00 ~ 08:00	群馬県	Gunma (Maebashi)	0.101
11	3/17 07:00 ~ 08:00	埼玉県	Saitama (Saitama)	0.065
12	3/17 07:00 ~ 08:00	千葉県	Chiba (Ichihara)	0.038
13	3/17 07:00 ~ 08:00	東京都	Tokyo (Shinjuku-ku	0.052
14	3/17 07:00 ~ 08:00	神奈川県	Kanagawa (Chigasa	0.054
15	3/17 07:00 ~ 08:00	新潟県	Niigata (Niigata)	0.047
16	3/17 07:00 ~ 08:00	富山県	Toyama (Imizu)	0.048
17	3/17 07:00 ~ 08:00	石川県	Ishikawa (Kanazawa	0.049
18	3/17 07:00 ~ 08:00	福井県	Fukui (Fukui)	0.046

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19	3/17 07:00 ~ 08:00	山梨県	Yamanashi (Kofu)	0.044
20	3/17 07:00 ~ 08:00	長野県	Nagano (Nagano)	0.083
21	3/17 07:00 ~ 08:00	岐阜県	Gifu (Kakamigahara	0.061
22	3/17 07:00 ~ 08:00	静岡県	Shizuoka (Shizuoka	0.038
23	3/17 07:00 ~ 08:00	愛知県	Aichi (Nagoya)	0.039
24	3/17 07:00 ~ 08:00	三重県	Mie (Yokkaichi)	0.046
25	3/17 07:00 ~ 08:00	滋賀県	Shiga (Ohtsu)	0.033
26	3/17 07:00 ~ 08:00	京都府	Kyoto (Kyoto)	0.038
27	3/17 07:00 ~ 08:00	大阪府	Osaka (Osaka)	0.043
28	3/17 07:00 ~ 08:00	兵庫県	Hyogo (Kobe)	0.037
29	3/17 07:00 ~ 08:00	奈良県	Nara (Nara)	0.047
30	3/17 07:00 ~ 08:00	和歌山県	Wakayama (Wakaya	0.032
31	3/17 07:00 ~ 08:00	鳥取県	Tottori (Touhaku-g	0.076
32	3/17 07:00 ~ 08:00	島根県	Shimane (Matsue)	0.042
33	3/17 07:00 ~ 08:00	岡山県	Okayama (Okayama	0.051
34	3/17 07:00 ~ 08:00	広島県	Hiroshima (Hiroshin	0.049
35	3/17 07:00 ~ 08:00	山口県	Yamaguchi (Yamagı	0.096
36	3/17 07:00 ~ 08:00	徳島県	Tokushima (Tokush	0.038
37	3/17 07:00 ~ 08:00	香川県	Kagawa (Takamatsı	0.052
38	3/17 07:00 ~ 08:00	愛媛県	Ehime (Matsuyama)	0.05
39	3/17 07:00 ~ 08:00	高知県	Kochi (Kochi)	0.028
40	3/17 07:00 ~ 08:00	福岡県	Fukuoka (Dazaifu)	0.036
41	3/17 07:00 ~ 08:00	佐賀県	Saga (Saga)	0.04
42	3/17 07:00 ~ 08:00	長崎県	Nagasaki (Ohmura)	0.029
43	3/17 07:00 ~ 08:00	熊本県	Kumamoto (Uto)	0.027
44	3/17 07:00 ~ 08:00	大分県	Oita (Oita)	0.05
45	3/17 07:00 ~ 08:00	宮崎県	Miyazaki (Miyazaki)	0.026
46	3/17 07:00 ~ 08:00	鹿児島県	Kagoshima (Kagosh	0.034
47	3/17 07:00 ~ 08:00	沖縄県	Okinawa (Uruma)	0.021
1	3/17 08:00 ~ 09:00	北海道	Hokkaido (Sapporo)	0.029
2	3/17 08:00 ~ 09:00	青森県	Aomori (Aomori)	0.02
3	3/17 08:00 ~ 09:00	岩手県	Iwate (Morioka)	0.031
4	3/17 08:00 ~ 09:00	宮城県	Miyagi (Sendai)	
5	3/17 08:00 ~ 09:00	秋田県	Akita (Akita)	0.034
6	3/17 08:00 ~ 09:00	山形県	Yamagata (Yamaga	0.051
7	3/17 08:00 ~ 09:00	福島県	Fukushima (Futaba-gun)	
8	3/17 08:00 ~ 09:00	茨城県	Ibaraki (Mito)	0.222
9	3/17 08:00 ~ 09:00	栃木県	Tochigi (Itsunomiya	0.197
10	3/17 08:00 ~ 09:00	群馬県	Gunma (Maebashi)	0.101
11	3/17 08:00 ~ 09:00	埼玉県	Saitama (Saitama)	0.064
12	3/17 08:00 ~ 09:00	千葉県	Chiba (Ichihara)	0.038
13	3/17 08:00 ~ 09:00	東京都	Tokyo (Shinjuku-ku	0.052
14	3/17 08:00 ~ 09:00	神奈川県	Kanagawa (Chigasa	0.054
15	3/17 08:00 ~ 09:00	新潟県	Niigata (Niigata)	0.046
16	3/17 08:00 ~ 09:00	富山県	Toyama (Imizu)	0.049
17	3/17 08:00 ~ 09:00	石川県	Ishikawa (Kanazawa	0.047
18	3/17 08:00 ~ 09:00	福井県	Fukui (Fukui)	0.05
19	3/17 08:00 ~ 09:00	山梨県	Yamanashi (Kofu)	0.044
20	3/17 08:00 ~ 09:00	長野県	Nagano (Nagano)	0.082
21	3/17 08:00 ~ 09:00	岐阜県	Gifu (Kakamigahara	0.061
22	3/17 08:00 ~ 09:00	静岡県	Shizuoka (Shizuoka	0.039
23	3/17 08:00 ~ 09:00	愛知県	Aichi (Nagoya)	0.039
24	3/17 08:00 ~ 09:00	三重県	Mie (Yokkaichi)	0.045
25	3/17 08:00 ~ 09:00	滋賀県	Shiga (Ohtsu)	0.033
26	3/17 08:00 ~ 09:00	京都府	Kyoto (Kyoto)	0.038
27	3/17 08:00 ~ 09:00	大阪府	Osaka (Osaka)	0.042
28	3/17 08:00 ~ 09:00	兵庫県	Hyogo (Kobe)	0.036

29	3/17 08:00 ~ 09:00	奈良県	Nara (Nara)	0.047
30	3/17 08:00 ~ 09:00	和歌山県	Wakayama (Wakaya	0.031
31	3/17 08:00 ~ 09:00	鳥取県	Tottori (Touhaku-g	0.078
32	3/17 08:00 ~ 09:00	島根県	Shimane (Matsue)	0.043
33	3/17 08:00 ~ 09:00	岡山県	Okayama (Okayama	0.051
34	3/17 08:00 ~ 09:00	広島県	Hiroshima (Hiroshin	0.049
35	3/17 08:00 ~ 09:00	山口県	Yamaguchi (Yamagi	0.094
36	3/17 08:00 ~ 09:00	徳島県	Tokushima (Tokush	0.038
37	3/17 08:00 ~ 09:00	香川県	Kagawa (Takamatsi	0.052
38	3/17 08:00 ~ 09:00	愛媛県	Ehime (Matsuyama	0.049
39	3/17 08:00 ~ 09:00	高知県	Kochi (Kochi)	0.027
40	3/17 08:00 ~ 09:00	福岡県	Fukuoka (Dazaifu)	0.036
41	3/17 08:00 ~ 09:00	佐賀県	Saga (Saga)	0.04
42	3/17 08:00 ~ 09:00	長崎県	Nagasaki (Ohmura)	0.029
43	3/17 08:00 ~ 09:00	熊本県	Kumamoto (Uto)	0.027
44	3/17 08:00 ~ 09:00	大分県	Oita (Oita)	0.05
45	3/17 08:00 ~ 09:00	宮崎県	Miyazaki (Miyazaki)	0.026
46	3/17 08:00 ~ 09:00	鹿児島県	Kagoshima (Kagosh	0.034
47	3/17 08:00 ~ 09:00	沖縄県	Okinawa (Uruma)	0.021
1	3/17 09:00 ~ 10:00	北海道	Hokkaido (Sapporo	0.028
2	3/17 09:00 ~ 10:00	青森県	Aomori (Aomori)	0.02
3	3/17 09:00 ~ 10:00	岩手県	Iwate (Morioka)	0.031
4	3/17 09:00 ~ 10:00	宮城県	Miyagi (Sendai)	0.138
5	3/17 09:00 ~ 10:00	秋田県	Akita (Akita)	0.034
6	3/17 09:00 ~ 10:00	山形県	Yamagata (Yamaga	0.052
7	3/17 09:00 ~ 10:00	福島県	Fukushima (Futaba-gun)	
8	3/17 09:00 ~ 10:00	茨城県	Ibaraki (Mito)	0.218
9	3/17 09:00 ~ 10:00	栃木県	Tochigi (Utsunomiya	0.195
10	3/17 09:00 ~ 10:00	群馬県	Gunma (Maebashi)	0.1
11	3/17 09:00 ~ 10:00	埼玉県	Saitama (Saitama)	0.064
12	3/17 09:00 ~ 10:00	千葉県	Chiba (Ichihara)	0.038
13	3/17 09:00 ~ 10:00	東京都	Tokyo (Shinjuku-ku	0.052
14	3/17 09:00 ~ 10:00	神奈川県	Kanagawa (Chigasa	0.053
15	3/17 09:00 ~ 10:00	新潟県	Niigata (Niigata)	0.046
16	3/17 09:00 ~ 10:00	富山県	Toyama (Imizu)	0.05
17	3/17 09:00 ~ 10:00	石川県	Ishikawa (Kanazawa	0.047
18	3/17 09:00 ~ 10:00	福井県	Fukui (Fukui)	0.051
19	3/17 09:00 ~ 10:00	山梨県	Yamanashi (Kofu)	0.044
20	3/17 09:00 ~ 10:00	長野県	Nagano (Nagano)	0.081
21	3/17 09:00 ~ 10:00	岐阜県	Gifu (Kakamigahara	0.06
22	3/17 09:00 ~ 10:00	静岡県	Shizuoka (Shizuoka	0.043
23	3/17 09:00 ~ 10:00	愛知県	Aichi (Nagoya)	0.039
24	3/17 09:00 ~ 10:00	三重県	Mie (Yokkaichi)	0.045
25	3/17 09:00 ~ 10:00	滋賀県	Shiga (Ohtsu)	0.033
26	3/17 09:00 ~ 10:00	京都府	Kyoto (Kyoto)	0.038
27	3/17 09:00 ~ 10:00	大阪府	Osaka (Osaka)	0.042
28	3/17 09:00 ~ 10:00	兵庫県	Hyogo (Kobe)	0.036
29	3/17 09:00 ~ 10:00	奈良県	Nara (Nara)	0.047
30	3/17 09:00 ~ 10:00	和歌山県	Wakayama (Wakaya	0.031
31	3/17 09:00 ~ 10:00	鳥取県	Tottori (Touhaku-g	0.079
32	3/17 09:00 ~ 10:00	島根県	Shimane (Matsue)	0.039
33	3/17 09:00 ~ 10:00	岡山県	Okayama (Okayama	0.049
34	3/17 09:00 ~ 10:00	広島県	Hiroshima (Hiroshin	0.048
35	3/17 09:00 ~ 10:00	山口県	Yamaguchi (Yamagi	0.092
36	3/17 09:00 ~ 10:00	徳島県	Tokushima (Tokush	0.037
37	3/17 09:00 ~ 10:00	香川県	Kagawa (Takamatsi	0.052
38	3/17 09:00 ~ 10:00	愛媛県	Ehime (Matsuyama	0.048

39	3/17 09:00 ~ 10:00	高知県	Kochi (Kochi)	0.025
40	3/17 09:00 ~ 10:00	福岡県	Fukuoka (Dazaifu)	0.036
41	3/17 09:00 ~ 10:00	佐賀県	Saga (Saga)	0.04
42	3/17 09:00 ~ 10:00	長崎県	Nagasaki (Ohmura)	0.029
43	3/17 09:00 ~ 10:00	熊本県	Kumamoto (Uto)	0.027
44	3/17 09:00 ~ 10:00	大分県	Oita (Oita)	0.049
45	3/17 09:00 ~ 10:00	宮崎県	Miyazaki (Miyazaki)	0.026
46	3/17 09:00 ~ 10:00	鹿児島県	Kagoshima (Kagosh	0.034
47	3/17 09:00 ~ 10:00	沖縄県	Okinawa (Uruma)	0.021
1	3/17 10:00 ~ 11:00	北海道	Hokkaido (Sapporo)	0.029
2	3/17 10:00 ~ 11:00	青森県	Aomori (Aomori)	0.02
3	3/17 10:00 ~ 11:00	岩手県	Iwate (Morioka)	0.031
4	3/17 10:00 ~ 11:00	宮城県	Miyagi (Sendai)	0.137
5	3/17 10:00 ~ 11:00	秋田県	Akita (Akita)	0.034
6	3/17 10:00 ~ 11:00	山形県	Yamagata (Yamaga	0.053
7	3/17 10:00 ~ 11:00	福島県	Fukushima (Futaba-gun)	
8	3/17 10:00 ~ 11:00	茨城県	Ibaraki (Mito)	0.217
9	3/17 10:00 ~ 11:00	栃木県	Tochigi (Itsunomiya	0.194
10	3/17 10:00 ~ 11:00	群馬県	Gunma (Maebashi)	0.099
11	3/17 10:00 ~ 11:00	埼玉県	Saitama (Saitama)	0.064
12	3/17 10:00 ~ 11:00	千葉県	Chiba (Ichihara)	0.038
13	3/17 10:00 ~ 11:00	東京都	Tokyo (Shinjuku-ku	0.051
14	3/17 10:00 ~ 11:00	神奈川県	Kanagawa (Chigasa	0.053
15	3/17 10:00 ~ 11:00	新潟県	Niigata (Niigata)	0.046
16	3/17 10:00 ~ 11:00	富山県	Toyama (Imizu)	0.049
17	3/17 10:00 ~ 11:00	石川県	Ishikawa (Kanazawa	0.05
18	3/17 10:00 ~ 11:00	福井県	Fukui (Fukui)	0.049
19	3/17 10:00 ~ 11:00	山梨県	Yamanashi (Kofu)	0.044
20	3/17 10:00 ~ 11:00	長野県	Nagano (Nagano)	0.08
21	3/17 10:00 ~ 11:00	岐阜県	Gifu (Kakamigahara	0.061
22	3/17 10:00 ~ 11:00	静岡県	Shizuoka (Shizuoka	0.044
23	3/17 10:00 ~ 11:00	愛知県	Aichi (Nagoya)	0.04
24	3/17 10:00 ~ 11:00	三重県	Mie (Yokkaichi)	0.045
25	3/17 10:00 ~ 11:00	滋賀県	Shiga (Ohtsu)	0.033
26	3/17 10:00 ~ 11:00	京都府	Kyoto (Kyoto)	0.038
27	3/17 10:00 ~ 11:00	大阪府	Osaka (Osaka)	0.043
28	3/17 10:00 ~ 11:00	兵庫県	Hyogo (Kobe)	0.036
29	3/17 10:00 ~ 11:00	奈良県	Nara (Nara)	0.047
30	3/17 10:00 ~ 11:00	和歌山県	Wakayama (Wakaya	0.031
31	3/17 10:00 ~ 11:00	鳥取県	Tottori (Touhaku-g	0.083
32	3/17 10:00 ~ 11:00	島根県	Shimane (Matsue)	0.041
33	3/17 10:00 ~ 11:00	岡山県	Okayama (Okayama	0.048
34	3/17 10:00 ~ 11:00	広島県	Hiroshima (Hiroshin	0.048
35	3/17 10:00 ~ 11:00	山口県	Yamaguchi (Yamagu	0.092
36	3/17 10:00 ~ 11:00	徳島県	Tokushima (Tokush	0.037
37	3/17 10:00 ~ 11:00	香川県	Kagawa (Takamatsu	0.052
38	3/17 10:00 ~ 11:00	愛媛県	Ehime (Matsuyama)	0.047
39	3/17 10:00 ~ 11:00	高知県	Kochi (Kochi)	0.025
40	3/17 10:00 ~ 11:00	福岡県	Fukuoka (Dazaifu)	0.036
41	3/17 10:00 ~ 11:00	佐賀県	Saga (Saga)	0.039
42	3/17 10:00 ~ 11:00	長崎県	Nagasaki (Ohmura)	0.029
43	3/17 10:00 ~ 11:00	熊本県	Kumamoto (Uto)	0.027
44	3/17 10:00 ~ 11:00	大分県	Oita (Oita)	0.05
45	3/17 10:00 ~ 11:00	宮崎県	Miyazaki (Miyazaki)	0.026
46	3/17 10:00 ~ 11:00	鹿児島県	Kagoshima (Kagosh	0.034
47	3/17 10:00 ~ 11:00	沖縄県	Okinawa (Uruma)	0.021
1	3/17 11:00 ~ 12:00	北海道	Hokkaido (Sapporo)	0.031

2	3/17 11:00 ~ 12:00	青森県	Aomori (Aomori)	0.022
3	3/17 11:00 ~ 12:00	岩手県	Iwate (Morioka)	0.03
4	3/17 11:00 ~ 12:00	宮城県	Miyagi (Sendai)	0.139
5	3/17 11:00 ~ 12:00	秋田県	Akita (Akita)	0.034
6	3/17 11:00 ~ 12:00	山形県	Yamagata (Yamaga	0.05
7	3/17 11:00 ~ 12:00	福島県	Fukushima (Futaba-gun)	
8	3/17 11:00 ~ 12:00	茨城県	Ibaraki (Mito)	0.215
9	3/17 11:00 ~ 12:00	栃木県	Tochigi (Itsunomiya	0.193
10	3/17 11:00 ~ 12:00	群馬県	Gunma (Maebashi)	0.099
11	3/17 11:00 ~ 12:00	埼玉県	Saitama (Saitama)	0.064
12	3/17 11:00 ~ 12:00	千葉県	Chiba (Ichihara)	0.038
13	3/17 11:00 ~ 12:00	東京都	Tokyo (Shinjuku-ku	0.051
14	3/17 11:00 ~ 12:00	神奈川県	Kanagawa (Chigasa	0.053
15	3/17 11:00 ~ 12:00	新潟県	Niigata (Niigata)	0.046
16	3/17 11:00 ~ 12:00	富山県	Toyama (Imizu)	0.048
17	3/17 11:00 ~ 12:00	石川県	Ishikawa (Kanazawa	0.048
18	3/17 11:00 ~ 12:00	福井県	Fukui (Fukui)	0.049
19	3/17 11:00 ~ 12:00	山梨県	Yamanashi (Kofu)	0.044
20	3/17 11:00 ~ 12:00	長野県	Nagano (Nagano)	0.079
21	3/17 11:00 ~ 12:00	岐阜県	Gifu (Kakamigahara	0.06
22	3/17 11:00 ~ 12:00	静岡県	Shizuoka (Shizuoka	0.044
23	3/17 11:00 ~ 12:00	愛知県	Aichi (Nagoya)	0.04
24	3/17 11:00 ~ 12:00	三重県	Mie (Yokkaichi)	0.045
25	3/17 11:00 ~ 12:00	滋賀県	Shiga (Ohtsu)	0.033
26	3/17 11:00 ~ 12:00	京都府	Kyoto (Kyoto)	0.038
27	3/17 11:00 ~ 12:00	大阪府	Osaka (Osaka)	0.043
28	3/17 11:00 ~ 12:00	兵庫県	Hyogo (Kobe)	0.037
29	3/17 11:00 ~ 12:00	奈良県	Nara (Nara)	0.047
30	3/17 11:00 ~ 12:00	和歌山県	Wakayama (Wakaya	0.031
31	3/17 11:00 ~ 12:00	鳥取県	Tottori (Touhaku-g	0.078
32	3/17 11:00 ~ 12:00	島根県	Shimane (Matsue)	0.042
33	3/17 11:00 ~ 12:00	岡山県	Okayama (Okayama	0.048
34	3/17 11:00 ~ 12:00	広島県	Hiroshima (Hiroshin	0.048
35	3/17 11:00 ~ 12:00	山口県	Yamaguchi (Yamagu	0.092
36	3/17 11:00 ~ 12:00	徳島県	Tokushima (Tokush	0.037
37	3/17 11:00 ~ 12:00	香川県	Kagawa (Takamatsu	0.052
38	3/17 11:00 ~ 12:00	愛媛県	Ehime (Matsuyama	0.047
39	3/17 11:00 ~ 12:00	高知県	Kochi (Kochi)	0.025
40	3/17 11:00 ~ 12:00	福岡県	Fukuoka (Dazaifu)	0.036
41	3/17 11:00 ~ 12:00	佐賀県	Saga (Saga)	0.039
42	3/17 11:00 ~ 12:00	長崎県	Nagasaki (Ohmura)	0.029
43	3/17 11:00 ~ 12:00	熊本県	Kumamoto (Uto)	0.026
44	3/17 11:00 ~ 12:00	大分県	Oita (Oita)	0.05
45	3/17 11:00 ~ 12:00	宮崎県	Miyazaki (Miyazaki)	0.026
46	3/17 11:00 ~ 12:00	鹿児島県	Kagoshima (Kagosh	0.034
47	3/17 11:00 ~ 12:00	沖縄県	Okinawa (Uruma)	0.021
1	3/17 12:00 ~ 13:00	北海道	Hokkaido (Sapporo	0.035
2	3/17 12:00 ~ 13:00	青森県	Aomori (Aomori)	0.027
3	3/17 12:00 ~ 13:00	岩手県	Iwate (Morioka)	0.03
4	3/17 12:00 ~ 13:00	宮城県	Miyagi (Sendai)	0.143
5	3/17 12:00 ~ 13:00	秋田県	Akita (Akita)	0.034
6	3/17 12:00 ~ 13:00	山形県	Yamagata (Yamaga	0.052
7	3/17 12:00 ~ 13:00	福島県	Fukushima (Futaba-gun)	
8	3/17 12:00 ~ 13:00	茨城県	Ibaraki (Mito)	0.214
9	3/17 12:00 ~ 13:00	栃木県	Tochigi (Itsunomiya	0.192
10	3/17 12:00 ~ 13:00	群馬県	Gunma (Maebashi)	0.099
11	3/17 12:00 ~ 13:00	埼玉県	Saitama (Saitama)	0.063

12	3/17 12:00 ~ 13:00	千葉県	Chiba (Ichihara)	0.037
13	3/17 12:00 ~ 13:00	東京都	Tokyo (Shinjuku-kι	0.051
14	3/17 12:00 ~ 13:00	神奈川県	Kanagawa (Chigasa	0.053
15	3/17 12:00 ~ 13:00	新潟県	Niigata (Niigata)	0.046
16	3/17 12:00 ~ 13:00	富山県	Toyama (Imizu)	0.049
17	3/17 12:00 ~ 13:00	石川県	Ishikawa (Kanazawa	0.048
18	3/17 12:00 ~ 13:00	福井県	Fukui (Fukui)	0.046
19	3/17 12:00 ~ 13:00	山梨県	Yamanashi (Kofu)	0.044
20	3/17 12:00 ~ 13:00	長野県	Nagano (Nagano)	0.078
21	3/17 12:00 ~ 13:00	岐阜県	Gifu (Kakamigahara	0.06
22	3/17 12:00 ~ 13:00	静岡県	Shizuoka (Shizuoka	0.044
23	3/17 12:00 ~ 13:00	愛知県	Aichi (Nagoya)	0.039
24	3/17 12:00 ~ 13:00	三重県	Mie (Yokkaichi)	0.046
25	3/17 12:00 ~ 13:00	滋賀県	Shiga (Ohtsu)	0.033
26	3/17 12:00 ~ 13:00	京都府	Kyoto (Kyoto)	0.038
27	3/17 12:00 ~ 13:00	大阪府	Osaka (Osaka)	0.043
28	3/17 12:00 ~ 13:00	兵庫県	Hyogo (Kobe)	0.038
29	3/17 12:00 ~ 13:00	奈良県	Nara (Nara)	0.048
30	3/17 12:00 ~ 13:00	和歌山県	Wakayama (Wakaya	0.031
31	3/17 12:00 ~ 13:00	鳥取県	Tottori (Touhaku-g	0.066
32	3/17 12:00 ~ 13:00	島根県	Shimane (Matsue)	0.043
33	3/17 12:00 ~ 13:00	岡山県	Okayama (Okayama	0.048
34	3/17 12:00 ~ 13:00	広島県	Hiroshima (Hiroshin	0.047
35	3/17 12:00 ~ 13:00	山口県	Yamaguchi (Yamagı	0.092
36	3/17 12:00 ~ 13:00	徳島県	Tokushima (Tokush	0.037
37	3/17 12:00 ~ 13:00	香川県	Kagawa (Takamatsı	0.052
38	3/17 12:00 ~ 13:00	愛媛県	Ehime (Matsuyama)	0.047
39	3/17 12:00 ~ 13:00	高知県	Kochi (Kochi)	0.025
40	3/17 12:00 ~ 13:00	福岡県	Fukuoka (Dazaifu)	0.036
41	3/17 12:00 ~ 13:00	佐賀県	Saga (Saga)	0.039
42	3/17 12:00 ~ 13:00	長崎県	Nagasaki (Ohmura)	0.029
43	3/17 12:00 ~ 13:00	熊本県	Kumamoto (Uto)	0.026
44	3/17 12:00 ~ 13:00	大分県	Oita (Oita)	0.049
45	3/17 12:00 ~ 13:00	宮崎県	Miyazaki (Miyazaki)	0.026
46	3/17 12:00 ~ 13:00	鹿児島県	Kagoshima (Kagosh	0.034
47	3/17 12:00 ~ 13:00	沖縄県	Okinawa (Uruma)	0.021
1	3/17 13:00 ~ 14:00	北海道	Hokkaido (Sapporo)	0.033
2	3/17 13:00 ~ 14:00	青森県	Aomori (Aomori)	0.033
3	3/17 13:00 ~ 14:00	岩手県	Iwate (Morioka)	0.03
4	3/17 13:00 ~ 14:00	宮城県	Miyagi (Sendai)	0.141
5	3/17 13:00 ~ 14:00	秋田県	Akita (Akita)	0.034
6	3/17 13:00 ~ 14:00	山形県	Yamagata (Yamaga	0.052
7	3/17 13:00 ~ 14:00	福島県	Fukushima (Futaba-gun)	
8	3/17 13:00 ~ 14:00	茨城県	Ibaraki (Mito)	0.212
9	3/17 13:00 ~ 14:00	栃木県	Tochigi (Itsunomiya	0.191
10	3/17 13:00 ~ 14:00	群馬県	Gunma (Maebashi)	0.098
11	3/17 13:00 ~ 14:00	埼玉県	Saitama (Saitama)	0.063
12	3/17 13:00 ~ 14:00	千葉県	Chiba (Ichihara)	0.038
13	3/17 13:00 ~ 14:00	東京都	Tokyo (Shinjuku-kι	0.051
14	3/17 13:00 ~ 14:00	神奈川県	Kanagawa (Chigasaki)	
15	3/17 13:00 ~ 14:00	新潟県	Niigata (Niigata)	0.046
16	3/17 13:00 ~ 14:00	富山県	Toyama (Imizu)	0.049
17	3/17 13:00 ~ 14:00	石川県	Ishikawa (Kanazawa	0.049
18	3/17 13:00 ~ 14:00	福井県	Fukui (Fukui)	0.046
19	3/17 13:00 ~ 14:00	山梨県	Yamanashi (Kofu)	0.044
20	3/17 13:00 ~ 14:00	長野県	Nagano (Nagano)	0.078
21	3/17 13:00 ~ 14:00	岐阜県	Gifu (Kakamigahara	0.06

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22	3/17 13:00 ~ 14:00	静岡県	Shizuoka (Shizuoka	0.044
23	3/17 13:00 ~ 14:00	愛知県	Aichi (Nagoya)	0.039
24	3/17 13:00 ~ 14:00	三重県	Mie (Yokkaichi)	0.046
25	3/17 13:00 ~ 14:00	滋賀県	Shiga (Ohtsu)	0.038
26	3/17 13:00 ~ 14:00	京都府	Kyoto (Kyoto)	0.038
27	3/17 13:00 ~ 14:00	大阪府	Osaka (Osaka)	0.043
28	3/17 13:00 ~ 14:00	兵庫県	Hyogo (Kobe)	0.039
29	3/17 13:00 ~ 14:00	奈良県	Nara (Nara)	0.048
30	3/17 13:00 ~ 14:00	和歌山県	Wakayama (Wakaya	0.032
31	3/17 13:00 ~ 14:00	鳥取県	Tottori (Touhaku-g	0.061
32	3/17 13:00 ~ 14:00	島根県	Shimane (Matsue)	0.039
33	3/17 13:00 ~ 14:00	岡山県	Okayama (Okayama	0.049
34	3/17 13:00 ~ 14:00	広島県	Hiroshima (Hiroshin	0.049
35	3/17 13:00 ~ 14:00	山口県	Yamaguchi (Yamagu	0.092
36	3/17 13:00 ~ 14:00	徳島県	Tokushima (Tokush	0.037
37	3/17 13:00 ~ 14:00	香川県	Kagawa (Takamatsu	0.052
38	3/17 13:00 ~ 14:00	愛媛県	Ehime (Matsuyama)	0.047
39	3/17 13:00 ~ 14:00	高知県	Kochi (Kochi)	0.025
40	3/17 13:00 ~ 14:00	福岡県	Fukuoka (Dazaifu)	0.036
41	3/17 13:00 ~ 14:00	佐賀県	Saga (Saga)	0.039
42	3/17 13:00 ~ 14:00	長崎県	Nagasaki (Ohmura)	0.029
43	3/17 13:00 ~ 14:00	熊本県	Kumamoto (Uto)	0.026
44	3/17 13:00 ~ 14:00	大分県	Oita (Oita)	0.049
45	3/17 13:00 ~ 14:00	宮崎県	Miyazaki (Miyazaki)	0.026
46	3/17 13:00 ~ 14:00	鹿児島県	Kagoshima (Kagosh	0.033
47	3/17 13:00 ~ 14:00	沖縄県	Okinawa (Uruma)	0.022
1	3/17 14:00 ~ 15:00	北海道	Hokkaido (Sapporo)	0.031
2	3/17 14:00 ~ 15:00	青森県	Aomori (Aomori)	0.033
3	3/17 14:00 ~ 15:00	岩手県	Iwate (Morioka)	0.029
4	3/17 14:00 ~ 15:00	宮城県	Miyagi (Sendai)	0.141
5	3/17 14:00 ~ 15:00	秋田県	Akita (Akita)	0.036
6	3/17 14:00 ~ 15:00	山形県	Yamagata (Yamaga	0.047
7	3/17 14:00 ~ 15:00	福島県	Fukushima (Futaba-gun)	
8	3/17 14:00 ~ 15:00	茨城県	Ibaraki (Mito)	0.212
9	3/17 14:00 ~ 15:00	栃木県	Tochigi (Itsunomiya	0.19
10	3/17 14:00 ~ 15:00	群馬県	Gunma (Maebashi)	0.097
11	3/17 14:00 ~ 15:00	埼玉県	Saitama (Saitama)	0.063
12	3/17 14:00 ~ 15:00	千葉県	Chiba (Ichihara)	0.038
13	3/17 14:00 ~ 15:00	東京都	Tokyo (Shinjuku-ku	0.051
14	3/17 14:00 ~ 15:00	神奈川県	Kanagawa (Chigasaki)	
15	3/17 14:00 ~ 15:00	新潟県	Niigata (Niigata)	0.046
16	3/17 14:00 ~ 15:00	富山県	Toyama (Imizu)	0.05
17	3/17 14:00 ~ 15:00	石川県	Ishikawa (Kanazawa	0.048
18	3/17 14:00 ~ 15:00	福井県	Fukui (Fukui)	0.046
19	3/17 14:00 ~ 15:00	山梨県	Yamanashi (Kofu)	0.044
20	3/17 14:00 ~ 15:00	長野県	Nagano (Nagano)	0.078
21	3/17 14:00 ~ 15:00	岐阜県	Gifu (Kakamigahara	0.061
22	3/17 14:00 ~ 15:00	静岡県	Shizuoka (Shizuoka	0.044
23	3/17 14:00 ~ 15:00	愛知県	Aichi (Nagoya)	0.039
24	3/17 14:00 ~ 15:00	三重県	Mie (Yokkaichi)	0.047
25	3/17 14:00 ~ 15:00	滋賀県	Shiga (Ohtsu)	0.036
26	3/17 14:00 ~ 15:00	京都府	Kyoto (Kyoto)	0.041
27	3/17 14:00 ~ 15:00	大阪府	Osaka (Osaka)	0.046
28	3/17 14:00 ~ 15:00	兵庫県	Hyogo (Kobe)	0.039
29	3/17 14:00 ~ 15:00	奈良県	Nara (Nara)	0.048
30	3/17 14:00 ~ 15:00	和歌山県	Wakayama (Wakaya	0.032
31	3/17 14:00 ~ 15:00	鳥取県	Tottori (Touhaku-g	0.062

32	3/17 14:00 ~ 15:00	島根県	Shimane (Matsue)	0.037
33	3/17 14:00 ~ 15:00	岡山県	Okayama (Okayama	0.053
34	3/17 14:00 ~ 15:00	広島県	Hiroshima (Hiroshin	0.049
35	3/17 14:00 ~ 15:00	山口県	Yamaguchi (Yamagı	0.092
36	3/17 14:00 ~ 15:00	徳島県	Tokushima (Tokush	0.037
37	3/17 14:00 ~ 15:00	香川県	Kagawa (Takamatsı	0.053
38	3/17 14:00 ~ 15:00	愛媛県	Ehime (Matsuyama)	0.047
39	3/17 14:00 ~ 15:00	高知県	Kochi (Kochi)	0.025
40	3/17 14:00 ~ 15:00	福岡県	Fukuoka (Dazaifu)	0.036
41	3/17 14:00 ~ 15:00	佐賀県	Saga (Saga)	0.039
42	3/17 14:00 ~ 15:00	長崎県	Nagasaki (Ohmura)	0.029
43	3/17 14:00 ~ 15:00	熊本県	Kumamoto (Uto)	0.027
44	3/17 14:00 ~ 15:00	大分県	Oita (Oita)	0.049
45	3/17 14:00 ~ 15:00	宮崎県	Miyazaki (Miyazaki)	0.026
46	3/17 14:00 ~ 15:00	鹿児島県	Kagoshima (Kagosh	0.034
47	3/17 14:00 ~ 15:00	沖縄県	Okinawa (Uruma)	0.021
1	3/17 15:00 ~ 16:00	北海道	Hokkaido (Sapporo)	0.031
2	3/17 15:00 ~ 16:00	青森県	Aomori (Aomori)	0.029
3	3/17 15:00 ~ 16:00	岩手県	Iwate (Morioka)	0.03
4	3/17 15:00 ~ 16:00	宮城県	Miyagi (Sendai)	0.141
5	3/17 15:00 ~ 16:00	秋田県	Akita (Akita)	0.041
6	3/17 15:00 ~ 16:00	山形県	Yamagata (Yamaga	0.046
7	3/17 15:00 ~ 16:00	福島県	Fukushima (Futaba-gun)	
8	3/17 15:00 ~ 16:00	茨城県	Ibaraki (Mito)	0.21
9	3/17 15:00 ~ 16:00	栃木県	Tochigi (Itsunomiya	0.189
10	3/17 15:00 ~ 16:00	群馬県	Gunma (Maebashi)	0.096
11	3/17 15:00 ~ 16:00	埼玉県	Saitama (Saitama)	0.063
12	3/17 15:00 ~ 16:00	千葉県	Chiba (Ichihara)	0.038
13	3/17 15:00 ~ 16:00	東京都	Tokyo (Shinjuku-ku	0.05
14	3/17 15:00 ~ 16:00	神奈川県	Kanagawa (Chigasa	0.052
15	3/17 15:00 ~ 16:00	新潟県	Niigata (Niigata)	0.046
16	3/17 15:00 ~ 16:00	富山県	Toyama (Imizu)	0.05
17	3/17 15:00 ~ 16:00	石川県	Ishikawa (Kanazawa	0.05
18	3/17 15:00 ~ 16:00	福井県	Fukui (Fukui)	0.045
19	3/17 15:00 ~ 16:00	山梨県	Yamanashi (Kofu)	0.044
20	3/17 15:00 ~ 16:00	長野県	Nagano (Nagano)	0.077
21	3/17 15:00 ~ 16:00	岐阜県	Gifu (Kakamigahara	0.06
22	3/17 15:00 ~ 16:00	静岡県	Shizuoka (Shizuoka	0.044
23	3/17 15:00 ~ 16:00	愛知県	Aichi (Nagoya)	0.039
24	3/17 15:00 ~ 16:00	三重県	Mie (Yokkaichi)	0.049
25	3/17 15:00 ~ 16:00	滋賀県	Shiga (Ohtsu)	0.034
26	3/17 15:00 ~ 16:00	京都府	Kyoto (Kyoto)	0.041
27	3/17 15:00 ~ 16:00	大阪府	Osaka (Osaka)	0.044
28	3/17 15:00 ~ 16:00	兵庫県	Hyogo (Kobe)	0.04
29	3/17 15:00 ~ 16:00	奈良県	Nara (Nara)	0.048
30	3/17 15:00 ~ 16:00	和歌山県	Wakayama (Wakaya	0.035
31	3/17 15:00 ~ 16:00	鳥取県	Tottori (Touhaku-g	0.063
32	3/17 15:00 ~ 16:00	島根県	Shimane (Matsue)	0.036
33	3/17 15:00 ~ 16:00	岡山県	Okayama (Okayama	0.051
34	3/17 15:00 ~ 16:00	広島県	Hiroshima (Hiroshin	0.048
35	3/17 15:00 ~ 16:00	山口県	Yamaguchi (Yamagı	0.094
36	3/17 15:00 ~ 16:00	徳島県	Tokushima (Tokush	0.039
37	3/17 15:00 ~ 16:00	香川県	Kagawa (Takamatsı	0.055
38	3/17 15:00 ~ 16:00	愛媛県	Ehime (Matsuyama)	0.047
39	3/17 15:00 ~ 16:00	高知県	Kochi (Kochi)	0.025
40	3/17 15:00 ~ 16:00	福岡県	Fukuoka (Dazaifu)	0.036
41	3/17 15:00 ~ 16:00	佐賀県	Saga (Saga)	0.04

42	3/17 15:00 ~ 16:00	長崎県	Nagasaki (Ohmura)	0.029
43	3/17 15:00 ~ 16:00	熊本県	Kumamoto (Uto)	0.027
44	3/17 15:00 ~ 16:00	大分県	Oita (Oita)	0.049
45	3/17 15:00 ~ 16:00	宮崎県	Miyazaki (Miyazaki)	0.026
46	3/17 15:00 ~ 16:00	鹿児島県	Kagoshima (Kagosh	0.033
47	3/17 15:00 ~ 16:00	沖縄県	Okinawa (Uruma)	0.021
1	3/17 16:00 ~ 17:00	北海道	Hokkaido (Sapporo)	0.029
2	3/17 16:00 ~ 17:00	青森県	Aomori (Aomori)	0.026
3	3/17 16:00 ~ 17:00	岩手県	Iwate (Morioka)	0.03
4	3/17 16:00 ~ 17:00	宮城県	Miyagi (Sendai)	0.141
5	3/17 16:00 ~ 17:00	秋田県	Akita (Akita)	0.044
6	3/17 16:00 ~ 17:00	山形県	Yamagata (Yamaga	0.047
7	3/17 16:00 ~ 17:00	福島県	Fukushima (Futaba-gun)	
8	3/17 16:00 ~ 17:00	茨城県	Ibaraki (Mito)	0.209
9	3/17 16:00 ~ 17:00	栃木県	Tochigi (Itsunomiya	0.189
10	3/17 16:00 ~ 17:00	群馬県	Gunma (Maebashi)	
11	3/17 16:00 ~ 17:00	埼玉県	Saitama (Saitama)	0.062
12	3/17 16:00 ~ 17:00	千葉県	Chiba (Ichihara)	0.037
13	3/17 16:00 ~ 17:00	東京都	Tokyo (Shinjuku-ku	0.05
14	3/17 16:00 ~ 17:00	神奈川県	Kanagawa (Chigasa	0.053
15	3/17 16:00 ~ 17:00	新潟県	Niigata (Niigata)	0.046
16	3/17 16:00 ~ 17:00	富山県	Toyama (Imizu)	0.052
17	3/17 16:00 ~ 17:00	石川県	Ishikawa (Kanazawa	0.05
18	3/17 16:00 ~ 17:00	福井県	Fukui (Fukui)	0.05
19	3/17 16:00 ~ 17:00	山梨県	Yamanashi (Kofu)	0.044
20	3/17 16:00 ~ 17:00	長野県	Nagano (Nagano)	0.077
21	3/17 16:00 ~ 17:00	岐阜県	Gifu (Kakamigahara	0.06
22	3/17 16:00 ~ 17:00	静岡県	Shizuoka (Shizuoka	0.043
23	3/17 16:00 ~ 17:00	愛知県	Aichi (Nagoya)	0.039
24	3/17 16:00 ~ 17:00	三重県	Mie (Yokkaichi)	0.049
25	3/17 16:00 ~ 17:00	滋賀県	Shiga (Ohtsu)	0.033
26	3/17 16:00 ~ 17:00	京都府	Kyoto (Kyoto)	0.039
27	3/17 16:00 ~ 17:00	大阪府	Osaka (Osaka)	0.043
28	3/17 16:00 ~ 17:00	兵庫県	Hyogo (Kobe)	0.039
29	3/17 16:00 ~ 17:00	奈良県	Nara (Nara)	0.048
30	3/17 16:00 ~ 17:00	和歌山県	Wakayama (Wakaya	0.034
31	3/17 16:00 ~ 17:00	鳥取県	Tottori (Touhaku-g	0.061
32	3/17 16:00 ~ 17:00	島根県	Shimane (Matsue)	0.036
33	3/17 16:00 ~ 17:00	岡山県	Okayama (Okayama	0.049
34	3/17 16:00 ~ 17:00	広島県	Hiroshima (Hiroshin	0.047
35	3/17 16:00 ~ 17:00	山口県	Yamaguchi (Yamagu	0.099
36	3/17 16:00 ~ 17:00	徳島県	Tokushima (Tokush	0.045
37	3/17 16:00 ~ 17:00	香川県	Kagawa (Takamatsu	0.054
38	3/17 16:00 ~ 17:00	愛媛県	Ehime (Matsuyama)	0.048
39	3/17 16:00 ~ 17:00	高知県	Kochi (Kochi)	0.025
40	3/17 16:00 ~ 17:00	福岡県	Fukuoka (Dazaifu)	0.036
41	3/17 16:00 ~ 17:00	佐賀県	Saga (Saga)	0.039
42	3/17 16:00 ~ 17:00	長崎県	Nagasaki (Ohmura)	0.028
43	3/17 16:00 ~ 17:00	熊本県	Kumamoto (Uto)	0.027
44	3/17 16:00 ~ 17:00	大分県	Oita (Oita)	0.049
45	3/17 16:00 ~ 17:00	宮崎県	Miyazaki (Miyazaki)	0.026
46	3/17 16:00 ~ 17:00	鹿児島県	Kagoshima (Kagosh	0.034
47	3/17 16:00 ~ 17:00	沖縄県	Okinawa (Uruma)	0.021
1	3/17 17:00 ~ 18:00	北海道	Hokkaido (Sapporo)	0.027
2	3/17 17:00 ~ 18:00	青森県	Aomori (Aomori)	0.024
3	3/17 17:00 ~ 18:00	岩手県	Iwate (Morioka)	0.031
4	3/17 17:00 ~ 18:00	宮城県	Miyagi (Sendai)	

5	3/17 17:00 ~ 18:00	秋田県	Akita (Akita)	0.039
6	3/17 17:00 ~ 18:00	山形県	Yamagata (Yamaga	0.049
7	3/17 17:00 ~ 18:00	福島県	Fukushima (Futaba-gun)	
8	3/17 17:00 ~ 18:00	茨城県	Ibaraki (Mito)	0.209
9	3/17 17:00 ~ 18:00	栃木県	Tochigi (Itsunomiya	0.188
10	3/17 17:00 ~ 18:00	群馬県	Gunma (Maebashi)	0.096
11	3/17 17:00 ~ 18:00	埼玉県	Saitama (Saitama)	0.063
12	3/17 17:00 ~ 18:00	千葉県	Chiba (Ichihara)	0.037
13	3/17 17:00 ~ 18:00	東京都	Tokyo (Shinjuku-ku	0.05
14	3/17 17:00 ~ 18:00	神奈川県	Kanagawa (Chigasa	0.052
15	3/17 17:00 ~ 18:00	新潟県	Niigata (Niigata)	0.047
16	3/17 17:00 ~ 18:00	富山県	Toyama (Imizu)	0.053
17	3/17 17:00 ~ 18:00	石川県	Ishikawa (Kanazawa	0.049
18	3/17 17:00 ~ 18:00	福井県	Fukui (Fukui)	0.05
19	3/17 17:00 ~ 18:00	山梨県	Yamanashi (Kofu)	0.044
20	3/17 17:00 ~ 18:00	長野県	Nagano (Nagano)	0.077
21	3/17 17:00 ~ 18:00	岐阜県	Gifu (Kakamigahara	0.06
22	3/17 17:00 ~ 18:00	静岡県	Shizuoka (Shizuoka	0.04
23	3/17 17:00 ~ 18:00	愛知県	Aichi (Nagoya)	0.039
24	3/17 17:00 ~ 18:00	三重県	Mie (Yokkaichi)	0.051
25	3/17 17:00 ~ 18:00	滋賀県	Shiga (Ohtsu)	0.033
26	3/17 17:00 ~ 18:00	京都府	Kyoto (Kyoto)	0.038
27	3/17 17:00 ~ 18:00	大阪府	Osaka (Osaka)	0.043
28	3/17 17:00 ~ 18:00	兵庫県	Hyogo (Kobe)	0.037
29	3/17 17:00 ~ 18:00	奈良県	Nara (Nara)	0.047
30	3/17 17:00 ~ 18:00	和歌山県	Wakayama (Wakaya	0.033
31	3/17 17:00 ~ 18:00	鳥取県	Tottori (Touhaku-g	0.059
32	3/17 17:00 ~ 18:00	島根県	Shimane (Matsue)	0.036
33	3/17 17:00 ~ 18:00	岡山県	Okayama (Okayama	0.049
34	3/17 17:00 ~ 18:00	広島県	Hiroshima (Hiroshin	0.046
35	3/17 17:00 ~ 18:00	山口県	Yamaguchi (Yamagu	0.102
36	3/17 17:00 ~ 18:00	徳島県	Tokushima (Tokush	0.042
37	3/17 17:00 ~ 18:00	香川県	Kagawa (Takamatsu	0.053
38	3/17 17:00 ~ 18:00	愛媛県	Ehime (Matsuyama)	0.049
39	3/17 17:00 ~ 18:00	高知県	Kochi (Kochi)	0.026
40	3/17 17:00 ~ 18:00	福岡県	Fukuoka (Dazaifu)	0.036
41	3/17 17:00 ~ 18:00	佐賀県	Saga (Saga)	0.039
42	3/17 17:00 ~ 18:00	長崎県	Nagasaki (Ohmura)	0.029
43	3/17 17:00 ~ 18:00	熊本県	Kumamoto (Uto)	0.027
44	3/17 17:00 ~ 18:00	大分県	Oita (Oita)	0.049
45	3/17 17:00 ~ 18:00	宮崎県	Miyazaki (Miyazaki)	0.026
46	3/17 17:00 ~ 18:00	鹿児島県	Kagoshima (Kagosh	0.034
47	3/17 17:00 ~ 18:00	沖縄県	Okinawa (Uruma)	0.021
1	3/17 18:00 ~ 19:00	北海道	Hokkaido (Sapporo)	0.028
2	3/17 18:00 ~ 19:00	青森県	Aomori (Aomori)	0.022
3	3/17 18:00 ~ 19:00	岩手県	Iwate (Morioka)	0.033
4	3/17 18:00 ~ 19:00	宮城県	Miyagi (Sendai)	
5	3/17 18:00 ~ 19:00	秋田県	Akita (Akita)	0.035
6	3/17 18:00 ~ 19:00	山形県	Yamagata (Yamaga	0.052
7	3/17 18:00 ~ 19:00	福島県	Fukushima (Futaba-gun)	
8	3/17 18:00 ~ 19:00	茨城県	Ibaraki (Mito)	0.207
9	3/17 18:00 ~ 19:00	栃木県	Tochigi (Itsunomiya	0.186
10	3/17 18:00 ~ 19:00	群馬県	Gunma (Maebashi)	0.095
11	3/17 18:00 ~ 19:00	埼玉県	Saitama (Saitama)	
12	3/17 18:00 ~ 19:00	千葉県	Chiba (Ichihara)	0.037
13	3/17 18:00 ~ 19:00	東京都	Tokyo (Shinjuku-ku	0.05
14	3/17 18:00 ~ 19:00	神奈川県	Kanagawa (Chigasa	0.052

15	3/17 18:00 ~ 19:00	新潟県	Niigata (Niigata)	0.046
16	3/17 18:00 ~ 19:00	富山県	Toyama (Imizu)	0.049
17	3/17 18:00 ~ 19:00	石川県	Ishikawa (Kanazawa	0.048
18	3/17 18:00 ~ 19:00	福井県	Fukui (Fukui)	0.047
19	3/17 18:00 ~ 19:00	山梨県	Yamanashi (Kofu)	0.044
20	3/17 18:00 ~ 19:00	長野県	Nagano (Nagano)	0.077
21	3/17 18:00 ~ 19:00	岐阜県	Gifu (Kakamigahara	0.06
22	3/17 18:00 ~ 19:00	静岡県	Shizuoka (Shizuoka	0.038
23	3/17 18:00 ~ 19:00	愛知県	Aichi (Nagoya)	0.039
24	3/17 18:00 ~ 19:00	三重県	Mie (Yokkaichi)	0.05
25	3/17 18:00 ~ 19:00	滋賀県	Shiga (Ohtsu)	0.033
26	3/17 18:00 ~ 19:00	京都府	Kyoto (Kyoto)	0.038
27	3/17 18:00 ~ 19:00	大阪府	Osaka (Osaka)	0.042
28	3/17 18:00 ~ 19:00	兵庫県	Hyogo (Kobe)	0.037
29	3/17 18:00 ~ 19:00	奈良県	Nara (Nara)	0.047
30	3/17 18:00 ~ 19:00	和歌山県	Wakayama (Wakaya	0.032
31	3/17 18:00 ~ 19:00	鳥取県	Tottori (Touhaku-g	0.058
32	3/17 18:00 ~ 19:00	島根県	Shimane (Matsue)	0.036
33	3/17 18:00 ~ 19:00	岡山県	Okayama (Okayama	0.048
34	3/17 18:00 ~ 19:00	広島県	Hiroshima (Hiroshin	0.047
35	3/17 18:00 ~ 19:00	山口県	Yamaguchi (Yamagı	0.096
36	3/17 18:00 ~ 19:00	徳島県	Tokushima (Tokush	0.04
37	3/17 18:00 ~ 19:00	香川県	Kagawa (Takamatsı	0.052
38	3/17 18:00 ~ 19:00	愛媛県	Ehime (Matsuyama	0.05
39	3/17 18:00 ~ 19:00	高知県	Kochi (Kochi)	0.026
40	3/17 18:00 ~ 19:00	福岡県	Fukuoka (Dazaifu)	0.036
41	3/17 18:00 ~ 19:00	佐賀県	Saga (Saga)	0.04
42	3/17 18:00 ~ 19:00	長崎県	Nagasaki (Ohmura)	0.029
43	3/17 18:00 ~ 19:00	熊本県	Kumamoto (Uto)	0.027
44	3/17 18:00 ~ 19:00	大分県	Oita (Oita)	0.049
45	3/17 18:00 ~ 19:00	宮崎県	Miyazaki (Miyazaki)	0.026
46	3/17 18:00 ~ 19:00	鹿児島県	Kagoshima (Kagosh	0.034
47	3/17 18:00 ~ 19:00	沖縄県	Okinawa (Uruma)	0.021
1	3/17 19:00 ~ 20:00	北海道	Hokkaido (Sapporo	0.029
2	3/17 19:00 ~ 20:00	青森県	Aomori (Aomori)	0.021
3	3/17 19:00 ~ 20:00	岩手県	Iwate (Morioka)	0.031
4	3/17 19:00 ~ 20:00	宮城県	Miyagi (Sendai)	
5	3/17 19:00 ~ 20:00	秋田県	Akita (Akita)	0.034
6	3/17 19:00 ~ 20:00	山形県	Yamagata (Yamaga	0.047
7	3/17 19:00 ~ 20:00	福島県	Fukushima (Futaba-gun)	
8	3/17 19:00 ~ 20:00	茨城県	Ibaraki (Mito)	0.207
9	3/17 19:00 ~ 20:00	栃木県	Tochigi (Itsunomiya	0.187
10	3/17 19:00 ~ 20:00	群馬県	Gunma (Maebashi)	0.095
11	3/17 19:00 ~ 20:00	埼玉県	Saitama (Saitama)	
12	3/17 19:00 ~ 20:00	千葉県	Chiba (Ichihara)	0.036
13	3/17 19:00 ~ 20:00	東京都	Tokyo (Shinjuku-ku	0.05
14	3/17 19:00 ~ 20:00	神奈川県	Kanagawa (Chigasa	0.052
15	3/17 19:00 ~ 20:00	新潟県	Niigata (Niigata)	0.046
16	3/17 19:00 ~ 20:00	富山県	Toyama (Imizu)	0.048
17	3/17 19:00 ~ 20:00	石川県	Ishikawa (Kanazawa	0.047
18	3/17 19:00 ~ 20:00	福井県	Fukui (Fukui)	0.046
19	3/17 19:00 ~ 20:00	山梨県	Yamanashi (Kofu)	0.044
20	3/17 19:00 ~ 20:00	長野県	Nagano (Nagano)	0.078
21	3/17 19:00 ~ 20:00	岐阜県	Gifu (Kakamigahara	0.06
22	3/17 19:00 ~ 20:00	静岡県	Shizuoka (Shizuoka	0.038
23	3/17 19:00 ~ 20:00	愛知県	Aichi (Nagoya)	0.039
24	3/17 19:00 ~ 20:00	三重県	Mie (Yokkaichi)	0.049

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25	3/17 19:00 ~ 20:00	滋賀県	Shiga (Ohtsu)	0.034
26	3/17 19:00 ~ 20:00	京都府	Kyoto (Kyoto)	0.038
27	3/17 19:00 ~ 20:00	大阪府	Osaka (Osaka)	0.042
28	3/17 19:00 ~ 20:00	兵庫県	Hyogo (Kobe)	0.037
29	3/17 19:00 ~ 20:00	奈良県	Nara (Nara)	0.047
30	3/17 19:00 ~ 20:00	和歌山県	Wakayama (Wakaya	0.032
31	3/17 19:00 ~ 20:00	鳥取県	Tottori (Touhaku-g	0.058
32	3/17 19:00 ~ 20:00	島根県	Shimane (Matsue)	0.036
33	3/17 19:00 ~ 20:00	岡山県	Okayama (Okayama	0.048
34	3/17 19:00 ~ 20:00	広島県	Hiroshima (Hiroshin	0.047
35	3/17 19:00 ~ 20:00	山口県	Yamaguchi (Yamagı	0.093
36	3/17 19:00 ~ 20:00	徳島県	Tokushima (Tokush	0.039
37	3/17 19:00 ~ 20:00	香川県	Kagawa (Takamatsı	0.052
38	3/17 19:00 ~ 20:00	愛媛県	Ehime (Matsuyama)	0.048
39	3/17 19:00 ~ 20:00	高知県	Kochi (Kochi)	0.025
40	3/17 19:00 ~ 20:00	福岡県	Fukuoka (Dazaifu)	0.036
41	3/17 19:00 ~ 20:00	佐賀県	Saga (Saga)	0.04
42	3/17 19:00 ~ 20:00	長崎県	Nagasaki (Ohmura)	0.029
43	3/17 19:00 ~ 20:00	熊本県	Kumamoto (Uto)	0.027
44	3/17 19:00 ~ 20:00	大分県	Oita (Oita)	0.049
45	3/17 19:00 ~ 20:00	宮崎県	Miyazaki (Miyazaki)	0.026
46	3/17 19:00 ~ 20:00	鹿児島県	Kagoshima (Kagosh	0.034
47	3/17 19:00 ~ 20:00	沖縄県	Okinawa (Uruma)	0.021
1	3/17 20:00 ~ 21:00	北海道	Hokkaido (Sapporo)	0.028
2	3/17 20:00 ~ 21:00	青森県	Aomori (Aomori)	0.021
3	3/17 20:00 ~ 21:00	岩手県	Iwate (Morioka)	0.031
4	3/17 20:00 ~ 21:00	宮城県	Miyagi (Sendai)	
5	3/17 20:00 ~ 21:00	秋田県	Akita (Akita)	0.034
6	3/17 20:00 ~ 21:00	山形県	Yamagata (Yamaga	0.049
7	3/17 20:00 ~ 21:00	福島県	Fukushima (Futaba-gun)	
8	3/17 20:00 ~ 21:00	茨城県	Ibaraki (Mito)	0.206
9	3/17 20:00 ~ 21:00	栃木県	Tochigi (Itsunomiya	0.185
10	3/17 20:00 ~ 21:00	群馬県	Gunma (Maebashi)	0.095
11	3/17 20:00 ~ 21:00	埼玉県	Saitama (Saitama)	
12	3/17 20:00 ~ 21:00	千葉県	Chiba (Ichihara)	0.036
13	3/17 20:00 ~ 21:00	東京都	Tokyo (Shinjuku-kı	0.05
14	3/17 20:00 ~ 21:00	神奈川県	Kanagawa (Chigasa	0.052
15	3/17 20:00 ~ 21:00	新潟県	Niigata (Niigata)	0.046
16	3/17 20:00 ~ 21:00	富山県	Toyama (Imizu)	0.051
17	3/17 20:00 ~ 21:00	石川県	Ishikawa (Kanazawa	0.049
18	3/17 20:00 ~ 21:00	福井県	Fukui (Fukui)	0.047
19	3/17 20:00 ~ 21:00	山梨県	Yamanashi (Kofu)	0.044
20	3/17 20:00 ~ 21:00	長野県	Nagano (Nagano)	0.078
21	3/17 20:00 ~ 21:00	岐阜県	Gifu (Kakamigahara	0.06
22	3/17 20:00 ~ 21:00	静岡県	Shizuoka (Shizuoka	0.038
23	3/17 20:00 ~ 21:00	愛知県	Aichi (Nagoya)	0.039
24	3/17 20:00 ~ 21:00	三重県	Mie (Yokkaichi)	0.048
25	3/17 20:00 ~ 21:00	滋賀県	Shiga (Ohtsu)	0.033
26	3/17 20:00 ~ 21:00	京都府	Kyoto (Kyoto)	0.039
27	3/17 20:00 ~ 21:00	大阪府	Osaka (Osaka)	0.042
28	3/17 20:00 ~ 21:00	兵庫県	Hyogo (Kobe)	0.037
29	3/17 20:00 ~ 21:00	奈良県	Nara (Nara)	0.047
30	3/17 20:00 ~ 21:00	和歌山県	Wakayama (Wakaya	0.032
31	3/17 20:00 ~ 21:00	鳥取県	Tottori (Touhaku-g	0.057
32	3/17 20:00 ~ 21:00	島根県	Shimane (Matsue)	0.036
33	3/17 20:00 ~ 21:00	岡山県	Okayama (Okayama	0.049
34	3/17 20:00 ~ 21:00	広島県	Hiroshima (Hiroshin	0.046

35	3/17 20:00 ~ 21:00	山口県	Yamaguchi (Yamagı	0.093
36	3/17 20:00 ~ 21:00	徳島県	Tokushima (Tokush	0.038
37	3/17 20:00 ~ 21:00	香川県	Kagawa (Takamatsı	0.052
38	3/17 20:00 ~ 21:00	愛媛県	Ehime (Matsuyama)	0.048
39	3/17 20:00 ~ 21:00	高知県	Kochi (Kochi)	0.025
40	3/17 20:00 ~ 21:00	福岡県	Fukuoka (Dazaifu)	0.036
41	3/17 20:00 ~ 21:00	佐賀県	Saga (Saga)	0.04
42	3/17 20:00 ~ 21:00	長崎県	Nagasaki (Ohmura)	0.029
43	3/17 20:00 ~ 21:00	熊本県	Kumamoto (Uto)	0.027
44	3/17 20:00 ~ 21:00	大分県	Oita (Oita)	0.049
45	3/17 20:00 ~ 21:00	宮崎県	Miyazaki (Miyazaki)	0.026
46	3/17 20:00 ~ 21:00	鹿児島県	Kagoshima (Kagosh	0.034
47	3/17 20:00 ~ 21:00	沖縄県	Okinawa (Uruma)	0.021
1	3/17 21:00 ~ 22:00	北海道	Hokkaido (Sapporo)	0.027
2	3/17 21:00 ~ 22:00	青森県	Aomori (Aomori)	0.02
3	3/17 21:00 ~ 22:00	岩手県	Iwate (Morioka)	0.03
4	3/17 21:00 ~ 22:00	宮城県	Miyagi (Sendai)	
5	3/17 21:00 ~ 22:00	秋田県	Akita (Akita)	0.036
6	3/17 21:00 ~ 22:00	山形県	Yamagata (Yamaga	0.05
7	3/17 21:00 ~ 22:00	福島県	Fukushima (Futaba-gun)	
8	3/17 21:00 ~ 22:00	茨城県	Ibaraki (Mito)	0.205
9	3/17 21:00 ~ 22:00	栃木県	Tochigi (Itsunomiya	0.185
10	3/17 21:00 ~ 22:00	群馬県	Gunma (Maebashi)	0.094
11	3/17 21:00 ~ 22:00	埼玉県	Saitama (Saitama)	0.063
12	3/17 21:00 ~ 22:00	千葉県	Chiba (Ichihara)	0.036
13	3/17 21:00 ~ 22:00	東京都	Tokyo (Shinjuku-ku	0.05
14	3/17 21:00 ~ 22:00	神奈川県	Kanagawa (Chigasa	0.052
15	3/17 21:00 ~ 22:00	新潟県	Niigata (Niigata)	0.046
16	3/17 21:00 ~ 22:00	富山県	Toyama (Imizu)	0.051
17	3/17 21:00 ~ 22:00	石川県	Ishikawa (Kanazawa	0.048
18	3/17 21:00 ~ 22:00	福井県	Fukui (Fukui)	0.05
19	3/17 21:00 ~ 22:00	山梨県	Yamanashi (Kofu)	0.044
20	3/17 21:00 ~ 22:00	長野県	Nagano (Nagano)	0.078
21	3/17 21:00 ~ 22:00	岐阜県	Gifu (Kakamigahara	0.06
22	3/17 21:00 ~ 22:00	静岡県	Shizuoka (Shizuoka	0.038
23	3/17 21:00 ~ 22:00	愛知県	Aichi (Nagoya)	0.039
24	3/17 21:00 ~ 22:00	三重県	Mie (Yokkaichi)	0.048
25	3/17 21:00 ~ 22:00	滋賀県	Shiga (Ohtsu)	0.032
26	3/17 21:00 ~ 22:00	京都府	Kyoto (Kyoto)	0.038
27	3/17 21:00 ~ 22:00	大阪府	Osaka (Osaka)	0.042
28	3/17 21:00 ~ 22:00	兵庫県	Hyogo (Kobe)	0.037
29	3/17 21:00 ~ 22:00	奈良県	Nara (Nara)	0.047
30	3/17 21:00 ~ 22:00	和歌山県	Wakayama (Wakaya	0.032
31	3/17 21:00 ~ 22:00	鳥取県	Tottori (Touhaku-g	0.063
32	3/17 21:00 ~ 22:00	島根県	Shimane (Matsue)	0.036
33	3/17 21:00 ~ 22:00	岡山県	Okayama (Okayama	0.049
34	3/17 21:00 ~ 22:00	広島県	Hiroshima (Hiroshin	0.047
35	3/17 21:00 ~ 22:00	山口県	Yamaguchi (Yamagı	0.093
36	3/17 21:00 ~ 22:00	徳島県	Tokushima (Tokush	0.038
37	3/17 21:00 ~ 22:00	香川県	Kagawa (Takamatsı	0.052
38	3/17 21:00 ~ 22:00	愛媛県	Ehime (Matsuyama)	0.048
39	3/17 21:00 ~ 22:00	高知県	Kochi (Kochi)	0.025
40	3/17 21:00 ~ 22:00	福岡県	Fukuoka (Dazaifu)	0.036
41	3/17 21:00 ~ 22:00	佐賀県	Saga (Saga)	0.04
42	3/17 21:00 ~ 22:00	長崎県	Nagasaki (Ohmura)	0.029
43	3/17 21:00 ~ 22:00	熊本県	Kumamoto (Uto)	0.027
44	3/17 21:00 ~ 22:00	大分県	Oita (Oita)	0.049

45	3/17 21:00 ~ 22:00	宮崎県	Miyazaki (Miyazaki)	0.026
46	3/17 21:00 ~ 22:00	鹿児島県	Kagoshima (Kagosh	0.034
47	3/17 21:00 ~ 22:00	沖縄県	Okinawa (Uruma)	0.021
1	3/17 22:00 ~ 23:00	北海道	Hokkaido (Sapporo)	0.028
2	3/17 22:00 ~ 23:00	青森県	Aomori (Aomori)	0.02
3	3/17 22:00 ~ 23:00	岩手県	Iwate (Morioka)	0.03
4	3/17 22:00 ~ 23:00	宮城県	Miyagi (Sendai)	
5	3/17 22:00 ~ 23:00	秋田県	Akita (Akita)	0.035
6	3/17 22:00 ~ 23:00	山形県	Yamagata (Yamaga	0.047
7	3/17 22:00 ~ 23:00	福島県	Fukushima (Futaba-gun)	
8	3/17 22:00 ~ 23:00	茨城県	Ibaraki (Mito)	0.205
9	3/17 22:00 ~ 23:00	栃木県	Tochigi (Itsunomiya	0.183
10	3/17 22:00 ~ 23:00	群馬県	Gunma (Maebashi)	0.093
11	3/17 22:00 ~ 23:00	埼玉県	Saitama (Saitama)	0.063
12	3/17 22:00 ~ 23:00	千葉県	Chiba (Ichihara)	0.036
13	3/17 22:00 ~ 23:00	東京都	Tokyo (Shinjuku-ku	0.05
14	3/17 22:00 ~ 23:00	神奈川県	Kanagawa (Chigasa	0.052
15	3/17 22:00 ~ 23:00	新潟県	Niigata (Niigata)	0.046
16	3/17 22:00 ~ 23:00	富山県	Toyama (Imizu)	0.051
17	3/17 22:00 ~ 23:00	石川県	Ishikawa (Kanazawa	0.047
18	3/17 22:00 ~ 23:00	福井県	Fukui (Fukui)	0.047
19	3/17 22:00 ~ 23:00	山梨県	Yamanashi (Kofu)	0.044
20	3/17 22:00 ~ 23:00	長野県	Nagano (Nagano)	0.079
21	3/17 22:00 ~ 23:00	岐阜県	Gifu (Kakamigahara	0.061
22	3/17 22:00 ~ 23:00	静岡県	Shizuoka (Shizuoka	0.038
23	3/17 22:00 ~ 23:00	愛知県	Aichi (Nagoya)	0.039
24	3/17 22:00 ~ 23:00	三重県	Mie (Yokkaichi)	0.048
25	3/17 22:00 ~ 23:00	滋賀県	Shiga (Ohtsu)	0.032
26	3/17 22:00 ~ 23:00	京都府	Kyoto (Kyoto)	0.038
27	3/17 22:00 ~ 23:00	大阪府	Osaka (Osaka)	0.042
28	3/17 22:00 ~ 23:00	兵庫県	Hyogo (Kobe)	0.037
29	3/17 22:00 ~ 23:00	奈良県	Nara (Nara)	0.047
30	3/17 22:00 ~ 23:00	和歌山県	Wakayama (Wakaya	0.032
31	3/17 22:00 ~ 23:00	鳥取県	Tottori (Touhaku-g	0.06
32	3/17 22:00 ~ 23:00	島根県	Shimane (Matsue)	0.036
33	3/17 22:00 ~ 23:00	岡山県	Okayama (Okayama	0.049
34	3/17 22:00 ~ 23:00	広島県	Hiroshima (Hiroshin	0.047
35	3/17 22:00 ~ 23:00	山口県	Yamaguchi (Yamagu	0.094
36	3/17 22:00 ~ 23:00	徳島県	Tokushima (Tokush	0.038
37	3/17 22:00 ~ 23:00	香川県	Kagawa (Takamatsu	0.052
38	3/17 22:00 ~ 23:00	愛媛県	Ehime (Matsuyama)	0.048
39	3/17 22:00 ~ 23:00	高知県	Kochi (Kochi)	0.025
40	3/17 22:00 ~ 23:00	福岡県	Fukuoka (Dazaifu)	0.037
41	3/17 22:00 ~ 23:00	佐賀県	Saga (Saga)	0.04
42	3/17 22:00 ~ 23:00	長崎県	Nagasaki (Ohmura)	0.029
43	3/17 22:00 ~ 23:00	熊本県	Kumamoto (Uto)	0.027
44	3/17 22:00 ~ 23:00	大分県	Oita (Oita)	0.049
45	3/17 22:00 ~ 23:00	宮崎県	Miyazaki (Miyazaki)	0.026
46	3/17 22:00 ~ 23:00	鹿児島県	Kagoshima (Kagosh	0.034
47	3/17 22:00 ~ 23:00	沖縄県	Okinawa (Uruma)	0.021
1	3/17 22:00 ~ 23:00	北海道	Hokkaido (Sapporo)	0.028
2	3/17 22:00 ~ 23:00	青森県	Aomori (Aomori)	0.02
3	3/17 22:00 ~ 23:00	岩手県	Iwate (Morioka)	0.03
4	3/17 22:00 ~ 23:00	宮城県	Miyagi (Sendai)	
5	3/17 22:00 ~ 23:00	秋田県	Akita (Akita)	0.035
6	3/17 22:00 ~ 23:00	山形県	Yamagata (Yamaga	0.047
7	3/17 22:00 ~ 23:00	福島県	Fukushima (Futaba-gun)	

8	3/17 22:00 ~ 23:00	茨城県	Ibaraki (Mito)	0.205
9	3/17 22:00 ~ 23:00	栃木県	Tochigi (Itsunomiya	0.183
10	3/17 22:00 ~ 23:00	群馬県	Gunma (Maebashi)	0.093
11	3/17 22:00 ~ 23:00	埼玉県	Saitama (Saitama)	0.063
12	3/17 22:00 ~ 23:00	千葉県	Chiba (Ichihara)	0.036
13	3/17 22:00 ~ 23:00	東京都	Tokyo (Shinjuku-ku	0.05
14	3/17 22:00 ~ 23:00	神奈川県	Kanagawa (Chigasa	0.052
15	3/17 22:00 ~ 23:00	新潟県	Niigata (Niigata)	0.046
16	3/17 22:00 ~ 23:00	富山県	Toyama (Imizu)	0.051
17	3/17 22:00 ~ 23:00	石川県	Ishikawa (Kanazawa	0.047
18	3/17 22:00 ~ 23:00	福井県	Fukui (Fukui)	0.047
19	3/17 22:00 ~ 23:00	山梨県	Yamanashi (Kofu)	0.044
20	3/17 22:00 ~ 23:00	長野県	Nagano (Nagano)	0.079
21	3/17 22:00 ~ 23:00	岐阜県	Gifu (Kakamigahara	0.061
22	3/17 22:00 ~ 23:00	静岡県	Shizuoka (Shizuoka	0.038
23	3/17 22:00 ~ 23:00	愛知県	Aichi (Nagoya)	0.039
24	3/17 22:00 ~ 23:00	三重県	Mie (Yokkaichi)	0.048
25	3/17 22:00 ~ 23:00	滋賀県	Shiga (Ohtsu)	0.032
26	3/17 22:00 ~ 23:00	京都府	Kyoto (Kyoto)	0.038
27	3/17 22:00 ~ 23:00	大阪府	Osaka (Osaka)	0.042
28	3/17 22:00 ~ 23:00	兵庫県	Hyogo (Kobe)	0.037
29	3/17 22:00 ~ 23:00	奈良県	Nara (Nara)	0.047
30	3/17 22:00 ~ 23:00	和歌山県	Wakayama (Wakaya	0.032
31	3/17 22:00 ~ 23:00	鳥取県	Tottori (Touhaku-g	0.06
32	3/17 22:00 ~ 23:00	島根県	Shimane (Matsue)	0.036
33	3/17 22:00 ~ 23:00	岡山県	Okayama (Okayama	0.049
34	3/17 22:00 ~ 23:00	広島県	Hiroshima (Hiroshin	0.047
35	3/17 22:00 ~ 23:00	山口県	Yamaguchi (Yamagu	0.094
36	3/17 22:00 ~ 23:00	徳島県	Tokushima (Tokush	0.038
37	3/17 22:00 ~ 23:00	香川県	Kagawa (Takamatsu	0.052
38	3/17 22:00 ~ 23:00	愛媛県	Ehime (Matsuyama)	0.048
39	3/17 22:00 ~ 23:00	高知県	Kochi (Kochi)	0.025
40	3/17 22:00 ~ 23:00	福岡県	Fukuoka (Dazaifu)	0.037
41	3/17 22:00 ~ 23:00	佐賀県	Saga (Saga)	0.04
42	3/17 22:00 ~ 23:00	長崎県	Nagasaki (Ohmura)	0.029
43	3/17 22:00 ~ 23:00	熊本県	Kumamoto (Uto)	0.027
44	3/17 22:00 ~ 23:00	大分県	Oita (Oita)	0.049
45	3/17 22:00 ~ 23:00	宮崎県	Miyazaki (Miyazaki)	0.026
46	3/17 22:00 ~ 23:00	鹿児島県	Kagoshima (Kagosh	0.034
47	3/17 22:00 ~ 23:00	沖縄県	Okinawa (Uruma)	0.021
1	3/17 23:00 ~ 24:00	北海道	Hokkaido (Sapporo)	0.031
2	3/17 23:00 ~ 24:00	青森県	Aomori (Aomori)	0.019
3	3/17 23:00 ~ 24:00	岩手県	Iwate (Morioka)	0.03
4	3/17 23:00 ~ 24:00	宮城県	Miyagi (Sendai)	
5	3/17 23:00 ~ 24:00	秋田県	Akita (Akita)	0.034
6	3/17 23:00 ~ 24:00	山形県	Yamagata (Yamaga	0.043
7	3/17 23:00 ~ 24:00	福島県	Fukushima (Futaba-gun)	
8	3/17 23:00 ~ 24:00	茨城県	Ibaraki (Mito)	0.204
9	3/17 23:00 ~ 24:00	栃木県	Tochigi (Itsunomiya	0.182
10	3/17 23:00 ~ 24:00	群馬県	Gunma (Maebashi)	0.093
11	3/17 23:00 ~ 24:00	埼玉県	Saitama (Saitama)	0.062
12	3/17 23:00 ~ 24:00	千葉県	Chiba (Ichihara)	0.036
13	3/17 23:00 ~ 24:00	東京都	Tokyo (Shinjuku-ku	0.05
14	3/17 23:00 ~ 24:00	神奈川県	Kanagawa (Chigasa	0.052
15	3/17 23:00 ~ 24:00	新潟県	Niigata (Niigata)	0.047
16	3/17 23:00 ~ 24:00	富山県	Toyama (Imizu)	0.049
17	3/17 23:00 ~ 24:00	石川県	Ishikawa (Kanazawa	0.047

18	3/17 23:00 ~ 24:00	福井県	Fukui (Fukui)	0.044
19	3/17 23:00 ~ 24:00	山梨県	Yamanashi (Kofu)	0.044
20	3/17 23:00 ~ 24:00	長野県	Nagano (Nagano)	0.079
21	3/17 23:00 ~ 24:00	岐阜県	Gifu (Kakamigahara	0.06
22	3/17 23:00 ~ 24:00	静岡県	Shizuoka (Shizuoka	0.038
23	3/17 23:00 ~ 24:00	愛知県	Aichi (Nagoya)	0.039
24	3/17 23:00 ~ 24:00	三重県	Mie (Yokkaichi)	0.049
25	3/17 23:00 ~ 24:00	滋賀県	Shiga (Ohtsu)	0.036
26	3/17 23:00 ~ 24:00	京都府	Kyoto (Kyoto)	0.038
27	3/17 23:00 ~ 24:00	大阪府	Osaka (Osaka)	0.042
28	3/17 23:00 ~ 24:00	兵庫県	Hyogo (Kobe)	0.037
29	3/17 23:00 ~ 24:00	奈良県	Nara (Nara)	0.047
30	3/17 23:00 ~ 24:00	和歌山県	Wakayama (Wakaya	0.032
31	3/17 23:00 ~ 24:00	鳥取県	Tottori (Touhaku-g	0.058
32	3/17 23:00 ~ 24:00	島根県	Shimane (Matsue)	0.036
33	3/17 23:00 ~ 24:00	岡山県	Okayama (Okayama	0.049
34	3/17 23:00 ~ 24:00	広島県	Hiroshima (Hiroshin	0.048
35	3/17 23:00 ~ 24:00	山口県	Yamaguchi (Yamagı	0.094
36	3/17 23:00 ~ 24:00	徳島県	Tokushima (Tokush	0.037
37	3/17 23:00 ~ 24:00	香川県	Kagawa (Takamatsı	0.052
38	3/17 23:00 ~ 24:00	愛媛県	Ehime (Matsuyama	0.049
39	3/17 23:00 ~ 24:00	高知県	Kochi (Kochi)	0.025
40	3/17 23:00 ~ 24:00	福岡県	Fukuoka (Dazaifu)	0.037
41	3/17 23:00 ~ 24:00	佐賀県	Saga (Saga)	0.041
42	3/17 23:00 ~ 24:00	長崎県	Nagasaki (Ohmura)	0.029
43	3/17 23:00 ~ 24:00	熊本県	Kumamoto (Uto)	0.027
44	3/17 23:00 ~ 24:00	大分県	Oita (Oita)	0.049
45	3/17 23:00 ~ 24:00	宮崎県	Miyazaki (Miyazaki)	0.026
46	3/17 23:00 ~ 24:00	鹿児島県	Kagoshima (Kagosh	0.034
47	3/17 23:00 ~ 24:00	沖縄県	Okinawa (Uruma)	0.021
1	3/18 00:00 ~ 01:00	北海道	Hokkaido (Sapporo)	0.03
2	3/18 00:00 ~ 01:00	青森県	Aomori (Aomori)	0.019
3	3/18 00:00 ~ 01:00	岩手県	Iwate (Morioka)	0.03
4	3/18 00:00 ~ 01:00	宮城県	Miyagi (Sendai)	
5	3/18 00:00 ~ 01:00	秋田県	Akita (Akita)	0.033
6	3/18 00:00 ~ 01:00	山形県	Yamagata (Yamaga	0.041
7	3/18 00:00 ~ 01:00	福島県	Fukushima (Futaba-gun)	
8	3/18 00:00 ~ 01:00	茨城県	Ibaraki (Mito)	0.203
9	3/18 00:00 ~ 01:00	栃木県	Tochigi (Itsunomiya	0.182
10	3/18 00:00 ~ 01:00	群馬県	Gunma (Maebashi)	0.092
11	3/18 00:00 ~ 01:00	埼玉県	Saitama (Saitama)	0.061
12	3/18 00:00 ~ 01:00	千葉県	Chiba (Ichihara)	0.036
13	3/18 00:00 ~ 01:00	東京都	Tokyo (Shinjuku-kı	0.05
14	3/18 00:00 ~ 01:00	神奈川県	Kanagawa (Chigasa	0.052
15	3/18 00:00 ~ 01:00	新潟県	Niigata (Niigata)	0.047
16	3/18 00:00 ~ 01:00	富山県	Toyama (Imizu)	0.048
17	3/18 00:00 ~ 01:00	石川県	Ishikawa (Kanazawa	0.047
18	3/18 00:00 ~ 01:00	福井県	Fukui (Fukui)	0.044
19	3/18 00:00 ~ 01:00	山梨県	Yamanashi (Kofu)	0.044
20	3/18 00:00 ~ 01:00	長野県	Nagano (Nagano)	0.079
21	3/18 00:00 ~ 01:00	岐阜県	Gifu (Kakamigahara	0.06
22	3/18 00:00 ~ 01:00	静岡県	Shizuoka (Shizuoka	0.038
23	3/18 00:00 ~ 01:00	愛知県	Aichi (Nagoya)	0.039
24	3/18 00:00 ~ 01:00	三重県	Mie (Yokkaichi)	0.048
25	3/18 00:00 ~ 01:00	滋賀県	Shiga (Ohtsu)	0.036
26	3/18 00:00 ~ 01:00	京都府	Kyoto (Kyoto)	0.041
27	3/18 00:00 ~ 01:00	大阪府	Osaka (Osaka)	0.042

28	3/18 00:00 ~ 01:00	兵庫県	Hyogo (Kobe)	0.037
29	3/18 00:00 ~ 01:00	奈良県	Nara (Nara)	0.047
30	3/18 00:00 ~ 01:00	和歌山県	Wakayama (Wakaya	0.032
31	3/18 00:00 ~ 01:00	鳥取県	Tottori (Touhaku-g	0.057
32	3/18 00:00 ~ 01:00	島根県	Shimane (Matsue)	0.036
33	3/18 00:00 ~ 01:00	岡山県	Okayama (Okayama	0.049
34	3/18 00:00 ~ 01:00	広島県	Hiroshima (Hiroshin	0.049
35	3/18 00:00 ~ 01:00	山口県	Yamaguchi (Yamagı	0.095
36	3/18 00:00 ~ 01:00	徳島県	Tokushima (Tokush	0.038
37	3/18 00:00 ~ 01:00	香川県	Kagawa (Takamatsı	0.052
38	3/18 00:00 ~ 01:00	愛媛県	Ehime (Matsuyama	0.049
39	3/18 00:00 ~ 01:00	高知県	Kochi (Kochi)	0.025
40	3/18 00:00 ~ 01:00	福岡県	Fukuoka (Dazaifu)	0.037
41	3/18 00:00 ~ 01:00	佐賀県	Saga (Saga)	0.041
42	3/18 00:00 ~ 01:00	長崎県	Nagasaki (Ohmura)	0.029
43	3/18 00:00 ~ 01:00	熊本県	Kumamoto (Uto)	0.027
44	3/18 00:00 ~ 01:00	大分県	Oita (Oita)	0.049
45	3/18 00:00 ~ 01:00	宮崎県	Miyazaki (Miyazaki)	0.027
46	3/18 00:00 ~ 01:00	鹿児島県	Kagoshima (Kagosh	0.034
47	3/18 00:00 ~ 01:00	沖縄県	Okinawa (Uruma)	0.021
1	3/18 01:00 ~ 02:00	北海道	Hokkaido (Sapporo	0.028
2	3/18 01:00 ~ 02:00	青森県	Aomori (Aomori)	0.02
3	3/18 01:00 ~ 02:00	岩手県	Iwate (Morioka)	0.03
4	3/18 01:00 ~ 02:00	宮城県	Miyagi (Sendai)	
5	3/18 01:00 ~ 02:00	秋田県	Akita (Akita)	0.033
6	3/18 01:00 ~ 02:00	山形県	Yamagata (Yamaga	0.041
7	3/18 01:00 ~ 02:00	福島県	Fukushima (Futaba-gun)	
8	3/18 01:00 ~ 02:00	茨城県	Ibaraki (Mito)	0.202
9	3/18 01:00 ~ 02:00	栃木県	Tochigi (Itsunomiya	0.181
10	3/18 01:00 ~ 02:00	群馬県	Gunma (Maebashi)	0.092
11	3/18 01:00 ~ 02:00	埼玉県	Saitama (Saitama)	0.061
12	3/18 01:00 ~ 02:00	千葉県	Chiba (Ichihara)	0.036
13	3/18 01:00 ~ 02:00	東京都	Tokyo (Shinjuku-ku	0.05
14	3/18 01:00 ~ 02:00	神奈川県	Kanagawa (Chigasa	0.052
15	3/18 01:00 ~ 02:00	新潟県	Niigata (Niigata)	0.05
16	3/18 01:00 ~ 02:00	富山県	Toyama (Imizu)	0.047
17	3/18 01:00 ~ 02:00	石川県	Ishikawa (Kanazawa	0.047
18	3/18 01:00 ~ 02:00	福井県	Fukui (Fukui)	0.044
19	3/18 01:00 ~ 02:00	山梨県	Yamanashi (Kofu)	0.044
20	3/18 01:00 ~ 02:00	長野県	Nagano (Nagano)	0.079
21	3/18 01:00 ~ 02:00	岐阜県	Gifu (Kakamigahara	0.06
22	3/18 01:00 ~ 02:00	静岡県	Shizuoka (Shizuoka	0.038
23	3/18 01:00 ~ 02:00	愛知県	Aichi (Nagoya)	0.039
24	3/18 01:00 ~ 02:00	三重県	Mie (Yokkaichi)	0.049
25	3/18 01:00 ~ 02:00	滋賀県	Shiga (Ohtsu)	0.034
26	3/18 01:00 ~ 02:00	京都府	Kyoto (Kyoto)	0.039
27	3/18 01:00 ~ 02:00	大阪府	Osaka (Osaka)	0.042
28	3/18 01:00 ~ 02:00	兵庫県	Hyogo (Kobe)	0.037
29	3/18 01:00 ~ 02:00	奈良県	Nara (Nara)	0.047
30	3/18 01:00 ~ 02:00	和歌山県	Wakayama (Wakaya	0.032
31	3/18 01:00 ~ 02:00	鳥取県	Tottori (Touhaku-g	0.056
32	3/18 01:00 ~ 02:00	島根県	Shimane (Matsue)	0.036
33	3/18 01:00 ~ 02:00	岡山県	Okayama (Okayama	0.05
34	3/18 01:00 ~ 02:00	広島県	Hiroshima (Hiroshin	0.05
35	3/18 01:00 ~ 02:00	山口県	Yamaguchi (Yamagı	0.095
36	3/18 01:00 ~ 02:00	徳島県	Tokushima (Tokush	0.038
37	3/18 01:00 ~ 02:00	香川県	Kagawa (Takamatsı	0.052

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38	3/18 01:00 ~ 02:00	愛媛県	Ehime (Matsuyama)	0.049
39	3/18 01:00 ~ 02:00	高知県	Kochi (Kochi)	0.026
40	3/18 01:00 ~ 02:00	福岡県	Fukuoka (Dazaifu)	0.037
41	3/18 01:00 ~ 02:00	佐賀県	Saga (Saga)	0.041
42	3/18 01:00 ~ 02:00	長崎県	Nagasaki (Ohmura)	0.029
43	3/18 01:00 ~ 02:00	熊本県	Kumamoto (Uto)	0.027
44	3/18 01:00 ~ 02:00	大分県	Oita (Oita)	0.049
45	3/18 01:00 ~ 02:00	宮崎県	Miyazaki (Miyazaki)	0.027
46	3/18 01:00 ~ 02:00	鹿児島県	Kagoshima (Kagosh	0.034
47	3/18 01:00 ~ 02:00	沖縄県	Okinawa (Uruma)	0.021
1	3/18 02:00 ~ 03:00	北海道	Hokkaido (Sapporo)	0.028
2	3/18 02:00 ~ 03:00	青森県	Aomori (Aomori)	0.02
3	3/18 02:00 ~ 03:00	岩手県	Iwate (Morioka)	0.03
4	3/18 02:00 ~ 03:00	宮城県	Miyagi (Sendai)	-
5	3/18 02:00 ~ 03:00	秋田県	Akita (Akita)	0.033
6	3/18 02:00 ~ 03:00	山形県	Yamagata (Yamaga	0.04
7	3/18 02:00 ~ 03:00	福島県	Fukushima (Futaba-gun)	
8	3/18 02:00 ~ 03:00	茨城県	Ibaraki (Mito)	0.201
9	3/18 02:00 ~ 03:00	栃木県	Tochigi (Itsunomiya	0.18
10	3/18 02:00 ~ 03:00	群馬県	Gunma (Maebashi)	0.091
11	3/18 02:00 ~ 03:00	埼玉県	Saitama (Saitama)	0.061
12	3/18 02:00 ~ 03:00	千葉県	Chiba (Ichihara)	0.036
13	3/18 02:00 ~ 03:00	東京都	Tokyo (Shinjuku-ku	0.049
14	3/18 02:00 ~ 03:00	神奈川県	Kanagawa (Chigasa	0.052
15	3/18 02:00 ~ 03:00	新潟県	Niigata (Niigata)	0.049
16	3/18 02:00 ~ 03:00	富山県	Toyama (Imizu)	0.046
17	3/18 02:00 ~ 03:00	石川県	Ishikawa (Kanazawa	0.047
18	3/18 02:00 ~ 03:00	福井県	Fukui (Fukui)	0.044
19	3/18 02:00 ~ 03:00	山梨県	Yamanashi (Kofu)	0.044
20	3/18 02:00 ~ 03:00	長野県	Nagano (Nagano)	0.08
21	3/18 02:00 ~ 03:00	岐阜県	Gifu (Kakamigahara	0.06
22	3/18 02:00 ~ 03:00	静岡県	Shizuoka (Shizuoka	0.038
23	3/18 02:00 ~ 03:00	愛知県	Aichi (Nagoya)	0.039
24	3/18 02:00 ~ 03:00	三重県	Mie (Yokkaichi)	0.047
25	3/18 02:00 ~ 03:00	滋賀県	Shiga (Ohtsu)	0.033
26	3/18 02:00 ~ 03:00	京都府	Kyoto (Kyoto)	0.038
27	3/18 02:00 ~ 03:00	大阪府	Osaka (Osaka)	0.043
28	3/18 02:00 ~ 03:00	兵庫県	Hyogo (Kobe)	0.037
29	3/18 02:00 ~ 03:00	奈良県	Nara (Nara)	0.047
30	3/18 02:00 ~ 03:00	和歌山県	Wakayama (Wakaya	0.032
31	3/18 02:00 ~ 03:00	鳥取県	Tottori (Touhaku-g	0.056
32	3/18 02:00 ~ 03:00	島根県	Shimane (Matsue)	0.036
33	3/18 02:00 ~ 03:00	岡山県	Okayama (Okayama	0.05
34	3/18 02:00 ~ 03:00	広島県	Hiroshima (Hiroshin	0.05
35	3/18 02:00 ~ 03:00	山口県	Yamaguchi (Yamagu	0.096
36	3/18 02:00 ~ 03:00	徳島県	Tokushima (Tokush	0.038
37	3/18 02:00 ~ 03:00	香川県	Kagawa (Takamatsu	0.052
38	3/18 02:00 ~ 03:00	愛媛県	Ehime (Matsuyama)	0.05
39	3/18 02:00 ~ 03:00	高知県	Kochi (Kochi)	0.026
40	3/18 02:00 ~ 03:00	福岡県	Fukuoka (Dazaifu)	0.038
41	3/18 02:00 ~ 03:00	佐賀県	Saga (Saga)	0.041
42	3/18 02:00 ~ 03:00	長崎県	Nagasaki (Ohmura)	0.029
43	3/18 02:00 ~ 03:00	熊本県	Kumamoto (Uto)	0.028
44	3/18 02:00 ~ 03:00	大分県	Oita (Oita)	0.05
45	3/18 02:00 ~ 03:00	宮崎県	Miyazaki (Miyazaki)	0.027
46	3/18 02:00 ~ 03:00	鹿児島県	Kagoshima (Kagosh	0.035
47	3/18 02:00 ~ 03:00	沖縄県	Okinawa (Uruma)	0.021

1	3/18 03:00 ~ 04:00	北海道	Hokkaido (Sapporo)	0.029
2	3/18 03:00 ~ 04:00	青森県	Aomori (Aomori)	0.019
3	3/18 03:00 ~ 04:00	岩手県	Iwate (Morioka)	0.03
4	3/18 03:00 ~ 04:00	宮城県	Miyagi (Sendai)	
5	3/18 03:00 ~ 04:00	秋田県	Akita (Akita)	0.033
6	3/18 03:00 ~ 04:00	山形県	Yamagata (Yamaga	0.04
7	3/18 03:00 ~ 04:00	福島県	Fukushima (Futaba-gun)	
8	3/18 03:00 ~ 04:00	茨城県	Ibaraki (Mito)	0.201
9	3/18 03:00 ~ 04:00	栃木県	Tochigi (Itsunomiya	0.179
10	3/18 03:00 ~ 04:00	群馬県	Gunma (Maebashi)	0.091
11	3/18 03:00 ~ 04:00	埼玉県	Saitama (Saitama)	0.061
12	3/18 03:00 ~ 04:00	千葉県	Chiba (Ichihara)	0.036
13	3/18 03:00 ~ 04:00	東京都	Tokyo (Shinjuku-ku	0.05
14	3/18 03:00 ~ 04:00	神奈川県	Kanagawa (Chigasa	0.051
15	3/18 03:00 ~ 04:00	新潟県	Niigata (Niigata)	0.047
16	3/18 03:00 ~ 04:00	富山県	Toyama (Imizu)	0.046
17	3/18 03:00 ~ 04:00	石川県	Ishikawa (Kanazawa	0.046
18	3/18 03:00 ~ 04:00	福井県	Fukui (Fukui)	0.044
19	3/18 03:00 ~ 04:00	山梨県	Yamanashi (Kofu)	0.044
20	3/18 03:00 ~ 04:00	長野県	Nagano (Nagano)	0.078
21	3/18 03:00 ~ 04:00	岐阜県	Gifu (Kakamigahara	0.06
22	3/18 03:00 ~ 04:00	静岡県	Shizuoka (Shizuoka	0.038
23	3/18 03:00 ~ 04:00	愛知県	Aichi (Nagoya)	0.039
24	3/18 03:00 ~ 04:00	三重県	Mie (Yokkaichi)	0.046
25	3/18 03:00 ~ 04:00	滋賀県	Shiga (Ohtsu)	0.032
26	3/18 03:00 ~ 04:00	京都府	Kyoto (Kyoto)	0.038
27	3/18 03:00 ~ 04:00	大阪府	Osaka (Osaka)	0.042
28	3/18 03:00 ~ 04:00	兵庫県	Hyogo (Kobe)	0.037
29	3/18 03:00 ~ 04:00	奈良県	Nara (Nara)	0.047
30	3/18 03:00 ~ 04:00	和歌山県	Wakayama (Wakaya	0.032
31	3/18 03:00 ~ 04:00	鳥取県	Tottori (Touhaku-g	0.057
32	3/18 03:00 ~ 04:00	島根県	Shimane (Matsue)	0.036
33	3/18 03:00 ~ 04:00	岡山県	Okayama (Okayama	0.05
34	3/18 03:00 ~ 04:00	広島県	Hiroshima (Hiroshin	0.05
35	3/18 03:00 ~ 04:00	山口県	Yamaguchi (Yamagu	0.096
36	3/18 03:00 ~ 04:00	徳島県	Tokushima (Tokush	0.038
37	3/18 03:00 ~ 04:00	香川県	Kagawa (Takamatsu	0.052
38	3/18 03:00 ~ 04:00	愛媛県	Ehime (Matsuyama)	0.05
39	3/18 03:00 ~ 04:00	高知県	Kochi (Kochi)	0.026
40	3/18 03:00 ~ 04:00	福岡県	Fukuoka (Dazaifu)	0.037
41	3/18 03:00 ~ 04:00	佐賀県	Saga (Saga)	0.041
42	3/18 03:00 ~ 04:00	長崎県	Nagasaki (Ohmura)	0.029
43	3/18 03:00 ~ 04:00	熊本県	Kumamoto (Uto)	0.028
44	3/18 03:00 ~ 04:00	大分県	Oita (Oita)	0.05
45	3/18 03:00 ~ 04:00	宮崎県	Miyazaki (Miyazaki)	0.027
46	3/18 03:00 ~ 04:00	鹿児島県	Kagoshima (Kagosh	0.035
47	3/18 03:00 ~ 04:00	沖縄県	Okinawa (Uruma)	0.021
1	3/18 04:00 ~ 05:00	北海道	Hokkaido (Sapporo)	0.028
2	3/18 04:00 ~ 05:00	青森県	Aomori (Aomori)	0.019
3	3/18 04:00 ~ 05:00	岩手県	Iwate (Morioka)	0.03
4	3/18 04:00 ~ 05:00	宮城県	Miyagi (Sendai)	
5	3/18 04:00 ~ 05:00	秋田県	Akita (Akita)	0.034
6	3/18 04:00 ~ 05:00	山形県	Yamagata (Yamaga	0.04
7	3/18 04:00 ~ 05:00	福島県	Fukushima (Futaba-gun)	
8	3/18 04:00 ~ 05:00	茨城県	Ibaraki (Mito)	0.199
9	3/18 04:00 ~ 05:00	栃木県	Tochigi (Itsunomiya	0.178
10	3/18 04:00 ~ 05:00	群馬県	Gunma (Maebashi)	0.09

11	3/18 04:00 ~ 05:00	埼玉県	Saitama (Saitama)	0.061
12	3/18 04:00 ~ 05:00	千葉県	Chiba (Ichihara)	0.036
13	3/18 04:00 ~ 05:00	東京都	Tokyo (Shinjuku-ku	0.049
14	3/18 04:00 ~ 05:00	神奈川県	Kanagawa (Chigasa	0.051
15	3/18 04:00 ~ 05:00	新潟県	Niigata (Niigata)	0.047
16	3/18 04:00 ~ 05:00	富山県	Toyama (Imizu)	0.046
17	3/18 04:00 ~ 05:00	石川県	Ishikawa (Kanazawa	0.046
18	3/18 04:00 ~ 05:00	福井県	Fukui (Fukui)	0.044
19	3/18 04:00 ~ 05:00	山梨県	Yamanashi (Kofu)	0.044
20	3/18 04:00 ~ 05:00	長野県	Nagano (Nagano)	0.077
21	3/18 04:00 ~ 05:00	岐阜県	Gifu (Kakamigahara	0.06
22	3/18 04:00 ~ 05:00	静岡県	Shizuoka (Shizuoka	0.038
23	3/18 04:00 ~ 05:00	愛知県	Aichi (Nagoya)	0.039
24	3/18 04:00 ~ 05:00	三重県	Mie (Yokkaichi)	0.045
25	3/18 04:00 ~ 05:00	滋賀県	Shiga (Ohtsu)	0.032
26	3/18 04:00 ~ 05:00	京都府	Kyoto (Kyoto)	0.038
27	3/18 04:00 ~ 05:00	大阪府	Osaka (Osaka)	0.042
28	3/18 04:00 ~ 05:00	兵庫県	Hyogo (Kobe)	0.037
29	3/18 04:00 ~ 05:00	奈良県	Nara (Nara)	0.047
30	3/18 04:00 ~ 05:00	和歌山県	Wakayama (Wakaya	0.032
31	3/18 04:00 ~ 05:00	鳥取県	Tottori (Touhaku-g	0.057
32	3/18 04:00 ~ 05:00	島根県	Shimane (Matsue)	0.037
33	3/18 04:00 ~ 05:00	岡山県	Okayama (Okayama	0.05
34	3/18 04:00 ~ 05:00	広島県	Hiroshima (Hiroshin	0.051
35	3/18 04:00 ~ 05:00	山口県	Yamaguchi (Yamagu	0.096
36	3/18 04:00 ~ 05:00	徳島県	Tokushima (Tokush	0.038
37	3/18 04:00 ~ 05:00	香川県	Kagawa (Takamatsu	0.052
38	3/18 04:00 ~ 05:00	愛媛県	Ehime (Matsuyama)	0.051
39	3/18 04:00 ~ 05:00	高知県	Kochi (Kochi)	0.026
40	3/18 04:00 ~ 05:00	福岡県	Fukuoka (Dazaifu)	0.037
41	3/18 04:00 ~ 05:00	佐賀県	Saga (Saga)	0.041
42	3/18 04:00 ~ 05:00	長崎県	Nagasaki (Ohmura)	0.029
43	3/18 04:00 ~ 05:00	熊本県	Kumamoto (Uto)	0.028
44	3/18 04:00 ~ 05:00	大分県	Oita (Oita)	0.05
45	3/18 04:00 ~ 05:00	宮崎県	Miyazaki (Miyazaki)	0.027
46	3/18 04:00 ~ 05:00	鹿児島県	Kagoshima (Kagosh	0.035
47	3/18 04:00 ~ 05:00	沖縄県	Okinawa (Uruma)	0.021
1	3/18 05:00 ~ 06:00	北海道	Hokkaido (Sapporo)	0.028
2	3/18 05:00 ~ 06:00	青森県	Aomori (Aomori)	0.019
3	3/18 05:00 ~ 06:00	岩手県	Iwate (Morioka)	0.03
4	3/18 05:00 ~ 06:00	宮城県	Miyagi (Sendai)	
5	3/18 05:00 ~ 06:00	秋田県	Akita (Akita)	0.033
6	3/18 05:00 ~ 06:00	山形県	Yamagata (Yamaga	0.04
7	3/18 05:00 ~ 06:00	福島県	Fukushima (Futaba-gun)	
8	3/18 05:00 ~ 06:00	茨城県	Ibaraki (Mito)	0.199
9	3/18 05:00 ~ 06:00	栃木県	Tochigi (Utsunomiya	0.177
10	3/18 05:00 ~ 06:00	群馬県	Gunma (Maebashi)	0.09
11	3/18 05:00 ~ 06:00	埼玉県	Saitama (Saitama)	0.06
12	3/18 05:00 ~ 06:00	千葉県	Chiba (Ichihara)	0.036
13	3/18 05:00 ~ 06:00	東京都	Tokyo (Shinjuku-ku	0.049
14	3/18 05:00 ~ 06:00	神奈川県	Kanagawa (Chigasa	0.052
15	3/18 05:00 ~ 06:00	新潟県	Niigata (Niigata)	0.046
16	3/18 05:00 ~ 06:00	富山県	Toyama (Imizu)	0.046
17	3/18 05:00 ~ 06:00	石川県	Ishikawa (Kanazawa	0.046
18	3/18 05:00 ~ 06:00	福井県	Fukui (Fukui)	0.043
19	3/18 05:00 ~ 06:00	山梨県	Yamanashi (Kofu)	0.044
20	3/18 05:00 ~ 06:00	長野県	Nagano (Nagano)	0.076

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21	3/18 05:00 ~ 06:00	岐阜県	Gifu (Kakamigahara	0.06
22	3/18 05:00 ~ 06:00	静岡県	Shizuoka (Shizuoka	0.038
23	3/18 05:00 ~ 06:00	愛知県	Aichi (Nagoya)	0.039
24	3/18 05:00 ~ 06:00	三重県	Mie (Yokkaichi)	0.045
25	3/18 05:00 ~ 06:00	滋賀県	Shiga (Ohtsu)	0.032
26	3/18 05:00 ~ 06:00	京都府	Kyoto (Kyoto)	0.038
27	3/18 05:00 ~ 06:00	大阪府	Osaka (Osaka)	0.042
28	3/18 05:00 ~ 06:00	兵庫県	Hyogo (Kobe)	0.037
29	3/18 05:00 ~ 06:00	奈良県	Nara (Nara)	0.047
30	3/18 05:00 ~ 06:00	和歌山県	Wakayama (Wakaya	0.032
31	3/18 05:00 ~ 06:00	鳥取県	Tottori (Touhaku-g	0.057
32	3/18 05:00 ~ 06:00	島根県	Shimane (Matsue)	0.038
33	3/18 05:00 ~ 06:00	岡山県	Okayama (Okayama	0.05
34	3/18 05:00 ~ 06:00	広島県	Hiroshima (Hiroshin	0.051
35	3/18 05:00 ~ 06:00	山口県	Yamaguchi (Yamagu	0.096
36	3/18 05:00 ~ 06:00	徳島県	Tokushima (Tokush	0.038
37	3/18 05:00 ~ 06:00	香川県	Kagawa (Takamatsu	0.052
38	3/18 05:00 ~ 06:00	愛媛県	Ehime (Matsuyama	0.05
39	3/18 05:00 ~ 06:00	高知県	Kochi (Kochi)	0.026
40	3/18 05:00 ~ 06:00	福岡県	Fukuoka (Dazaifu)	0.037
41	3/18 05:00 ~ 06:00	佐賀県	Saga (Saga)	0.041
42	3/18 05:00 ~ 06:00	長崎県	Nagasaki (Ohmura)	0.029
43	3/18 05:00 ~ 06:00	熊本県	Kumamoto (Uto)	0.028
44	3/18 05:00 ~ 06:00	大分県	Oita (Oita)	0.051
45	3/18 05:00 ~ 06:00	宮崎県	Miyazaki (Miyazaki)	0.027
46	3/18 05:00 ~ 06:00	鹿児島県	Kagoshima (Kagosh	0.035
47	3/18 05:00 ~ 06:00	沖縄県	Okinawa (Uruma)	0.021
1	3/18 06:00 ~ 07:00	北海道	Hokkaido (Sapporo)	0.027
2	3/18 06:00 ~ 07:00	青森県	Aomori (Aomori)	0.019
3	3/18 06:00 ~ 07:00	岩手県	Iwate (Morioka)	0.031
4	3/18 06:00 ~ 07:00	宮城県	Miyagi (Sendai)	
5	3/18 06:00 ~ 07:00	秋田県	Akita (Akita)	0.033
6	3/18 06:00 ~ 07:00	山形県	Yamagata (Yamaga	0.04
7	3/18 06:00 ~ 07:00	福島県	Fukushima (Futaba-gun)	
8	3/18 06:00 ~ 07:00	茨城県	Ibaraki (Mito)	0.198
9	3/18 06:00 ~ 07:00	栃木県	Tochigi (Itsunomiya	0.175
10	3/18 06:00 ~ 07:00	群馬県	Gunma (Maebashi)	0.089
11	3/18 06:00 ~ 07:00	埼玉県	Saitama (Saitama)	0.06
12	3/18 06:00 ~ 07:00	千葉県	Chiba (Ichihara)	0.036
13	3/18 06:00 ~ 07:00	東京都	Tokyo (Shinjuku-ku	0.049
14	3/18 06:00 ~ 07:00	神奈川県	Kanagawa (Chigasa	0.051
15	3/18 06:00 ~ 07:00	新潟県	Niigata (Niigata)	0.046
16	3/18 06:00 ~ 07:00	富山県	Toyama (Imizu)	0.046
17	3/18 06:00 ~ 07:00	石川県	Ishikawa (Kanazawa	0.046
18	3/18 06:00 ~ 07:00	福井県	Fukui (Fukui)	0.043
19	3/18 06:00 ~ 07:00	山梨県	Yamanashi (Kofu)	0.044
20	3/18 06:00 ~ 07:00	長野県	Nagano (Nagano)	0.075
21	3/18 06:00 ~ 07:00	岐阜県	Gifu (Kakamigahara	0.06
22	3/18 06:00 ~ 07:00	静岡県	Shizuoka (Shizuoka	0.038
23	3/18 06:00 ~ 07:00	愛知県	Aichi (Nagoya)	0.039
24	3/18 06:00 ~ 07:00	三重県	Mie (Yokkaichi)	0.045
25	3/18 06:00 ~ 07:00	滋賀県	Shiga (Ohtsu)	0.032
26	3/18 06:00 ~ 07:00	京都府	Kyoto (Kyoto)	0.037
27	3/18 06:00 ~ 07:00	大阪府	Osaka (Osaka)	0.042
28	3/18 06:00 ~ 07:00	兵庫県	Hyogo (Kobe)	0.037
29	3/18 06:00 ~ 07:00	奈良県	Nara (Nara)	0.047
30	3/18 06:00 ~ 07:00	和歌山県	Wakayama (Wakaya	0.031

31	3/18 06:00 ~ 07:00	鳥取県	Tottori (Touhaku-g	0.058
32	3/18 06:00 ~ 07:00	島根県	Shimane (Matsue)	0.039
33	3/18 06:00 ~ 07:00	岡山県	Okayama (Okayama	0.051
34	3/18 06:00 ~ 07:00	広島県	Hiroshima (Hiroshin	0.051
35	3/18 06:00 ~ 07:00	山口県	Yamaguchi (Yamagı	0.097
36	3/18 06:00 ~ 07:00	徳島県	Tokushima (Tokush	0.038
37	3/18 06:00 ~ 07:00	香川県	Kagawa (Takamatsı	0.053
38	3/18 06:00 ~ 07:00	愛媛県	Ehime (Matsuyama	0.05
39	3/18 06:00 ~ 07:00	高知県	Kochi (Kochi)	0.027
40	3/18 06:00 ~ 07:00	福岡県	Fukuoka (Dazaifu)	0.038
41	3/18 06:00 ~ 07:00	佐賀県	Saga (Saga)	0.041
42	3/18 06:00 ~ 07:00	長崎県	Nagasaki (Ohmura)	0.03
43	3/18 06:00 ~ 07:00	熊本県	Kumamoto (Uto)	0.028
44	3/18 06:00 ~ 07:00	大分県	Oita (Oita)	0.051
45	3/18 06:00 ~ 07:00	宮崎県	Miyazaki (Miyazaki)	0.027
46	3/18 06:00 ~ 07:00	鹿児島県	Kagoshima (Kagosh	0.035
47	3/18 06:00 ~ 07:00	沖縄県	Okinawa (Uruma)	0.021
1	3/18 07:00 ~ 08:00	北海道	Hokkaido (Sapporo	0.027
2	3/18 07:00 ~ 08:00	青森県	Aomori (Aomori)	0.02
3	3/18 07:00 ~ 08:00	岩手県	Iwate (Morioka)	0.031
4	3/18 07:00 ~ 08:00	宮城県	Miyagi (Sendai)	
5	3/18 07:00 ~ 08:00	秋田県	Akita (Akita)	0.034
6	3/18 07:00 ~ 08:00	山形県	Yamagata (Yamaga	0.04
7	3/18 07:00 ~ 08:00	福島県	Fukushima (Futaba-gun)	
8	3/18 07:00 ~ 08:00	茨城県	Ibaraki (Mito)	0.197
9	3/18 07:00 ~ 08:00	栃木県	Tochigi (Itsunomiya	0.175
10	3/18 07:00 ~ 08:00	群馬県	Gunma (Maebashi)	0.089
11	3/18 07:00 ~ 08:00	埼玉県	Saitama (Saitama)	0.06
12	3/18 07:00 ~ 08:00	千葉県	Chiba (Ichihara)	0.036
13	3/18 07:00 ~ 08:00	東京都	Tokyo (Shinjuku-kı	0.049
14	3/18 07:00 ~ 08:00	神奈川県	Kanagawa (Chigasa	0.051
15	3/18 07:00 ~ 08:00	新潟県	Niigata (Niigata)	0.046
16	3/18 07:00 ~ 08:00	富山県	Toyama (Imizu)	0.046
17	3/18 07:00 ~ 08:00	石川県	Ishikawa (Kanazawa	0.046
18	3/18 07:00 ~ 08:00	福井県	Fukui (Fukui)	0.043
19	3/18 07:00 ~ 08:00	山梨県	Yamanashi (Kofu)	0.044
20	3/18 07:00 ~ 08:00	長野県	Nagano (Nagano)	0.074
21	3/18 07:00 ~ 08:00	岐阜県	Gifu (Kakamigahara	0.061
22	3/18 07:00 ~ 08:00	静岡県	Shizuoka (Shizuoka	0.038
23	3/18 07:00 ~ 08:00	愛知県	Aichi (Nagoya)	0.039
24	3/18 07:00 ~ 08:00	三重県	Mie (Yokkaichi)	0.045
25	3/18 07:00 ~ 08:00	滋賀県	Shiga (Ohtsu)	0.032
26	3/18 07:00 ~ 08:00	京都府	Kyoto (Kyoto)	0.038
27	3/18 07:00 ~ 08:00	大阪府	Osaka (Osaka)	0.042
28	3/18 07:00 ~ 08:00	兵庫県	Hyogo (Kobe)	0.037
29	3/18 07:00 ~ 08:00	奈良県	Nara (Nara)	0.047
30	3/18 07:00 ~ 08:00	和歌山県	Wakayama (Wakaya	0.031
31	3/18 07:00 ~ 08:00	鳥取県	Tottori (Touhaku-g	0.058
32	3/18 07:00 ~ 08:00	島根県	Shimane (Matsue)	0.039
33	3/18 07:00 ~ 08:00	岡山県	Okayama (Okayama	0.051
34	3/18 07:00 ~ 08:00	広島県	Hiroshima (Hiroshin	0.051
35	3/18 07:00 ~ 08:00	山口県	Yamaguchi (Yamagı	0.097
36	3/18 07:00 ~ 08:00	徳島県	Tokushima (Tokush	0.038
37	3/18 07:00 ~ 08:00	香川県	Kagawa (Takamatsı	0.053
38	3/18 07:00 ~ 08:00	愛媛県	Ehime (Matsuyama	0.05
39	3/18 07:00 ~ 08:00	高知県	Kochi (Kochi)	0.027
40	3/18 07:00 ~ 08:00	福岡県	Fukuoka (Dazaifu)	0.038

41	3/18 07:00 ~ 08:00	佐賀県	Saga (Saga)	0.041
42	3/18 07:00 ~ 08:00	長崎県	Nagasaki (Ohmura)	0.029
43	3/18 07:00 ~ 08:00	熊本県	Kumamoto (Uto)	0.028
44	3/18 07:00 ~ 08:00	大分県	Oita (Oita)	0.051
45	3/18 07:00 ~ 08:00	宮崎県	Miyazaki (Miyazaki)	0.027
46	3/18 07:00 ~ 08:00	鹿児島県	Kagoshima (Kagosh	0.035
47	3/18 07:00 ~ 08:00	沖縄県	Okinawa (Uruma)	0.021
1	3/18 08:00 ~ 09:00	北海道	Hokkaido (Sapporo)	0.027
2	3/18 08:00 ~ 09:00	青森県	Aomori (Aomori)	0.02
3	3/18 08:00 ~ 09:00	岩手県	Iwate (Morioka)	0.03
4	3/18 08:00 ~ 09:00	宮城県	Miyagi (Sendai)	
5	3/18 08:00 ~ 09:00	秋田県	Akita (Akita)	0.034
6	3/18 08:00 ~ 09:00	山形県	Yamagata (Yamaga	0.04
7	3/18 08:00 ~ 09:00	福島県	Fukushima (Futaba-gun)	
8	3/18 08:00 ~ 09:00	茨城県	Ibaraki (Mito)	0.195
9	3/18 08:00 ~ 09:00	栃木県	Tochigi (Itsunomiya	0.175
10	3/18 08:00 ~ 09:00	群馬県	Gunma (Maebashi)	0.088
11	3/18 08:00 ~ 09:00	埼玉県	Saitama (Saitama)	0.059
12	3/18 08:00 ~ 09:00	千葉県	Chiba (Ichihara)	0.035
13	3/18 08:00 ~ 09:00	東京都	Tokyo (Shinjuku-ku	0.049
14	3/18 08:00 ~ 09:00	神奈川県	Kanagawa (Chigasa	0.051
15	3/18 08:00 ~ 09:00	新潟県	Niigata (Niigata)	0.045
16	3/18 08:00 ~ 09:00	富山県	Toyama (Imizu)	0.047
17	3/18 08:00 ~ 09:00	石川県	Ishikawa (Kanazawa	0.046
18	3/18 08:00 ~ 09:00	福井県	Fukui (Fukui)	0.044
19	3/18 08:00 ~ 09:00	山梨県	Yamanashi (Kofu)	0.043
20	3/18 08:00 ~ 09:00	長野県	Nagano (Nagano)	0.073
21	3/18 08:00 ~ 09:00	岐阜県	Gifu (Kakamigahara	0.06
22	3/18 08:00 ~ 09:00	静岡県	Shizuoka (Shizuoka	0.037
23	3/18 08:00 ~ 09:00	愛知県	Aichi (Nagoya)	0.039
24	3/18 08:00 ~ 09:00	三重県	Mie (Yokkaichi)	0.045
25	3/18 08:00 ~ 09:00	滋賀県	Shiga (Ohtsu)	0.032
26	3/18 08:00 ~ 09:00	京都府	Kyoto (Kyoto)	0.038
27	3/18 08:00 ~ 09:00	大阪府	Osaka (Osaka)	0.042
28	3/18 08:00 ~ 09:00	兵庫県	Hyogo (Kobe)	0.036
29	3/18 08:00 ~ 09:00	奈良県	Nara (Nara)	0.046
30	3/18 08:00 ~ 09:00	和歌山県	Wakayama (Wakaya	0.031
31	3/18 08:00 ~ 09:00	鳥取県	Tottori (Touhaku-g	0.058
32	3/18 08:00 ~ 09:00	島根県	Shimane (Matsue)	0.038
33	3/18 08:00 ~ 09:00	岡山県	Okayama (Okayama	0.05
34	3/18 08:00 ~ 09:00	広島県	Hiroshima (Hiroshin	0.051
35	3/18 08:00 ~ 09:00	山口県	Yamaguchi (Yamagu	0.097
36	3/18 08:00 ~ 09:00	徳島県	Tokushima (Tokush	0.037
37	3/18 08:00 ~ 09:00	香川県	Kagawa (Takamatsu	0.052
38	3/18 08:00 ~ 09:00	愛媛県	Ehime (Matsuyama)	0.049
39	3/18 08:00 ~ 09:00	高知県	Kochi (Kochi)	0.027
40	3/18 08:00 ~ 09:00	福岡県	Fukuoka (Dazaifu)	0.037
41	3/18 08:00 ~ 09:00	佐賀県	Saga (Saga)	0.041
42	3/18 08:00 ~ 09:00	長崎県	Nagasaki (Ohmura)	0.03
43	3/18 08:00 ~ 09:00	熊本県	Kumamoto (Uto)	0.028
44	3/18 08:00 ~ 09:00	大分県	Oita (Oita)	0.051
45	3/18 08:00 ~ 09:00	宮崎県	Miyazaki (Miyazaki)	0.027
46	3/18 08:00 ~ 09:00	鹿児島県	Kagoshima (Kagosh	0.035
47	3/18 08:00 ~ 09:00	沖縄県	Okinawa (Uruma)	0.021
1	3/18 09:00 ~ 10:00	北海道	Hokkaido (Sapporo)	0.027
2	3/18 09:00 ~ 10:00	青森県	Aomori (Aomori)	0.02
3	3/18 09:00 ~ 10:00	岩手県	Iwate (Morioka)	0.029

4	3/18 09:00 ~ 10:00	宮城県	Miyagi (Sendai)	
5	3/18 09:00 ~ 10:00	秋田県	Akita (Akita)	0.034
6	3/18 09:00 ~ 10:00	山形県	Yamagata (Yamaga	0.04
7	3/18 09:00 ~ 10:00	福島県	Fukushima (Futaba-gun)	
8	3/18 09:00 ~ 10:00	茨城県	Ibaraki (Mito)	0.195
9	3/18 09:00 ~ 10:00	栃木県	Tochigi (Itsunomiya	0.172
10	3/18 09:00 ~ 10:00	群馬県	Gunma (Maebashi)	0.087
11	3/18 09:00 ~ 10:00	埼玉県	Saitama (Saitama)	0.059
12	3/18 09:00 ~ 10:00	千葉県	Chiba (Ichihara)	0.035
13	3/18 09:00 ~ 10:00	東京都	Tokyo (Shinjuku-ku	0.049
14	3/18 09:00 ~ 10:00	神奈川県	Kanagawa (Chigasa	0.051
15	3/18 09:00 ~ 10:00	新潟県	Niigata (Niigata)	0.046
16	3/18 09:00 ~ 10:00	富山県	Toyama (Imizu)	0.047
17	3/18 09:00 ~ 10:00	石川県	Ishikawa (Kanazawa	0.046
18	3/18 09:00 ~ 10:00	福井県	Fukui (Fukui)	0.043
19	3/18 09:00 ~ 10:00	山梨県	Yamanashi (Kofu)	0.043
20	3/18 09:00 ~ 10:00	長野県	Nagano (Nagano)	0.072
21	3/18 09:00 ~ 10:00	岐阜県	Gifu (Kakamigahara	0.06
22	3/18 09:00 ~ 10:00	静岡県	Shizuoka (Shizuoka	0.038
23	3/18 09:00 ~ 10:00	愛知県	Aichi (Nagoya)	0.039
24	3/18 09:00 ~ 10:00	三重県	Mie (Yokkaichi)	0.045
25	3/18 09:00 ~ 10:00	滋賀県	Shiga (Ohtsu)	0.032
26	3/18 09:00 ~ 10:00	京都府	Kyoto (Kyoto)	0.038
27	3/18 09:00 ~ 10:00	大阪府	Osaka (Osaka)	0.042
28	3/18 09:00 ~ 10:00	兵庫県	Hyogo (Kobe)	0.036
29	3/18 09:00 ~ 10:00	奈良県	Nara (Nara)	0.047
30	3/18 09:00 ~ 10:00	和歌山県	Wakayama (Wakaya	0.031
31	3/18 09:00 ~ 10:00	鳥取県	Tottori (Touhaku-g	0.058
32	3/18 09:00 ~ 10:00	島根県	Shimane (Matsue)	0.037
33	3/18 09:00 ~ 10:00	岡山県	Okayama (Okayama	0.049
34	3/18 09:00 ~ 10:00	広島県	Hiroshima (Hiroshin	0.049
35	3/18 09:00 ~ 10:00	山口県	Yamaguchi (Yamagu	0.095
36	3/18 09:00 ~ 10:00	徳島県	Tokushima (Tokush	0.037
37	3/18 09:00 ~ 10:00	香川県	Kagawa (Takamatsu	0.052
38	3/18 09:00 ~ 10:00	愛媛県	Ehime (Matsuyama)	0.047
39	3/18 09:00 ~ 10:00	高知県	Kochi (Kochi)	0.025
40	3/18 09:00 ~ 10:00	福岡県	Fukuoka (Dazaifu)	0.037
41	3/18 09:00 ~ 10:00	佐賀県	Saga (Saga)	0.041
42	3/18 09:00 ~ 10:00	長崎県	Nagasaki (Ohmura)	0.03
43	3/18 09:00 ~ 10:00	熊本県	Kumamoto (Uto)	0.027
44	3/18 09:00 ~ 10:00	大分県	Oita (Oita)	0.05
45	3/18 09:00 ~ 10:00	宮崎県	Miyazaki (Miyazaki)	0.027
46	3/18 09:00 ~ 10:00	鹿児島県	Kagoshima (Kagosh	0.035
47	3/18 09:00 ~ 10:00	沖縄県	Okinawa (Uruma)	0.021
1	3/18 10:00 ~ 11:00	北海道	Hokkaido (Sapporo)	0.027
2	3/18 10:00 ~ 11:00	青森県	Aomori (Aomori)	0.02
3	3/18 10:00 ~ 11:00	岩手県	Iwate (Morioka)	0.029
4	3/18 10:00 ~ 11:00	宮城県	Miyagi (Sendai)	
5	3/18 10:00 ~ 11:00	秋田県	Akita (Akita)	0.034
6	3/18 10:00 ~ 11:00	山形県	Yamagata (Yamaga	0.04
7	3/18 10:00 ~ 11:00	福島県	Fukushima (Futaba-gun)	
8	3/18 10:00 ~ 11:00	茨城県	Ibaraki (Mito)	0.193
9	3/18 10:00 ~ 11:00	栃木県	Tochigi (Itsunomiya	0.171
10	3/18 10:00 ~ 11:00	群馬県	Gunma (Maebashi)	0.087
11	3/18 10:00 ~ 11:00	埼玉県	Saitama (Saitama)	0.059
12	3/18 10:00 ~ 11:00	千葉県	Chiba (Ichihara)	0.035
13	3/18 10:00 ~ 11:00	東京都	Tokyo (Shinjuku-ku	0.048

14	3/18 10:00 ~ 11:00	神奈川県	Kanagawa (Chigasa	0.05
15	3/18 10:00 ~ 11:00	新潟県	Niigata (Niigata)	0.046
16	3/18 10:00 ~ 11:00	富山県	Toyama (Imizu)	0.047
17	3/18 10:00 ~ 11:00	石川県	Ishikawa (Kanazawa	0.046
18	3/18 10:00 ~ 11:00	福井県	Fukui (Fukui)	0.043
19	3/18 10:00 ~ 11:00	山梨県	Yamanashi (Kofu)	0.043
20	3/18 10:00 ~ 11:00	長野県	Nagano (Nagano)	0.072
21	3/18 10:00 ~ 11:00	岐阜県	Gifu (Kakamigahara	0.06
22	3/18 10:00 ~ 11:00	静岡県	Shizuoka (Shizuoka	0.038
23	3/18 10:00 ~ 11:00	愛知県	Aichi (Nagoya)	0.039
24	3/18 10:00 ~ 11:00	三重県	Mie (Yokkaichi)	0.045
25	3/18 10:00 ~ 11:00	滋賀県	Shiga (Ohtsu)	0.032
26	3/18 10:00 ~ 11:00	京都府	Kyoto (Kyoto)	0.037
27	3/18 10:00 ~ 11:00	大阪府	Osaka (Osaka)	0.042
28	3/18 10:00 ~ 11:00	兵庫県	Hyogo (Kobe)	0.036
29	3/18 10:00 ~ 11:00	奈良県	Nara (Nara)	0.046
30	3/18 10:00 ~ 11:00	和歌山県	Wakayama (Wakaya	0.031
31	3/18 10:00 ~ 11:00	鳥取県	Tottori (Touhaku-g	0.058
32	3/18 10:00 ~ 11:00	島根県	Shimane (Matsue)	0.037
33	3/18 10:00 ~ 11:00	岡山県	Okayama (Okayama	0.048
34	3/18 10:00 ~ 11:00	広島県	Hiroshima (Hiroshin	0.047
35	3/18 10:00 ~ 11:00	山口県	Yamaguchi (Yamagı	0.093
36	3/18 10:00 ~ 11:00	徳島県	Tokushima (Tokush	0.037
37	3/18 10:00 ~ 11:00	香川県	Kagawa (Takamatsı	0.052
38	3/18 10:00 ~ 11:00	愛媛県	Ehime (Matsuyama	0.047
39	3/18 10:00 ~ 11:00	高知県	Kochi (Kochi)	0.024
40	3/18 10:00 ~ 11:00	福岡県	Fukuoka (Dazaifu)	0.036
41	3/18 10:00 ~ 11:00	佐賀県	Saga (Saga)	0.04
42	3/18 10:00 ~ 11:00	長崎県	Nagasaki (Ohmura)	0.03
43	3/18 10:00 ~ 11:00	熊本県	Kumamoto (Uto)	0.027
44	3/18 10:00 ~ 11:00	大分県	Oita (Oita)	0.05
45	3/18 10:00 ~ 11:00	宮崎県	Miyazaki (Miyazaki)	0.027
46	3/18 10:00 ~ 11:00	鹿児島県	Kagoshima (Kagosh	0.034
47	3/18 10:00 ~ 11:00	沖縄県	Okinawa (Uruma)	0.021
1	3/18 11:00 ~ 12:00	北海道	Hokkaido (Sapporo	0.028
2	3/18 11:00 ~ 12:00	青森県	Aomori (Aomori)	0.02
3	3/18 11:00 ~ 12:00	岩手県	Iwate (Morioka)	0.028
4	3/18 11:00 ~ 12:00	宮城県	Miyagi (Sendai)	
5	3/18 11:00 ~ 12:00	秋田県	Akita (Akita)	0.033
6	3/18 11:00 ~ 12:00	山形県	Yamagata (Yamaga	0.04
7	3/18 11:00 ~ 12:00	福島県	Fukushima (Futaba-gun)	
8	3/18 11:00 ~ 12:00	茨城県	Ibaraki (Mito)	0.192
9	3/18 11:00 ~ 12:00	栃木県	Tochigi (Itsunomiya	0.17
10	3/18 11:00 ~ 12:00	群馬県	Gunma (Maebashi)	0.086
11	3/18 11:00 ~ 12:00	埼玉県	Saitama (Saitama)	0.059
12	3/18 11:00 ~ 12:00	千葉県	Chiba (Ichihara)	0.034
13	3/18 11:00 ~ 12:00	東京都	Tokyo (Shinjuku-kı	0.049
14	3/18 11:00 ~ 12:00	神奈川県	Kanagawa (Chigasa	0.05
15	3/18 11:00 ~ 12:00	新潟県	Niigata (Niigata)	0.046
16	3/18 11:00 ~ 12:00	富山県	Toyama (Imizu)	0.047
17	3/18 11:00 ~ 12:00	石川県	Ishikawa (Kanazawa	0.046
18	3/18 11:00 ~ 12:00	福井県	Fukui (Fukui)	0.043
19	3/18 11:00 ~ 12:00	山梨県	Yamanashi (Kofu)	0.044
20	3/18 11:00 ~ 12:00	長野県	Nagano (Nagano)	0.071
21	3/18 11:00 ~ 12:00	岐阜県	Gifu (Kakamigahara	0.06
22	3/18 11:00 ~ 12:00	静岡県	Shizuoka (Shizuoka	0.038
23	3/18 11:00 ~ 12:00	愛知県	Aichi (Nagoya)	0.038

24	3/18 11:00 ~ 12:00	三重県	Mie (Yokkaichi)	0.045
25	3/18 11:00 ~ 12:00	滋賀県	Shiga (Ohtsu)	0.032
26	3/18 11:00 ~ 12:00	京都府	Kyoto (Kyoto)	0.037
27	3/18 11:00 ~ 12:00	大阪府	Osaka (Osaka)	0.042
28	3/18 11:00 ~ 12:00	兵庫県	Hyogo (Kobe)	0.036
29	3/18 11:00 ~ 12:00	奈良県	Nara (Nara)	0.047
30	3/18 11:00 ~ 12:00	和歌山県	Wakayama (Wakaya	0.031
31	3/18 11:00 ~ 12:00	鳥取県	Tottori (Touhaku-g	0.058
32	3/18 11:00 ~ 12:00	島根県	Shimane (Matsue)	0.036
33	3/18 11:00 ~ 12:00	岡山県	Okayama (Okayama	0.048
34	3/18 11:00 ~ 12:00	広島県	Hiroshima (Hiroshin	0.047
35	3/18 11:00 ~ 12:00	山口県	Yamaguchi (Yamagı	0.093
36	3/18 11:00 ~ 12:00	徳島県	Tokushima (Tokush	0.037
37	3/18 11:00 ~ 12:00	香川県	Kagawa (Takamatsı	0.052
38	3/18 11:00 ~ 12:00	愛媛県	Ehime (Matsuyama	0.047
39	3/18 11:00 ~ 12:00	高知県	Kochi (Kochi)	0.024
40	3/18 11:00 ~ 12:00	福岡県	Fukuoka (Dazaifu)	0.036
41	3/18 11:00 ~ 12:00	佐賀県	Saga (Saga)	0.04
42	3/18 11:00 ~ 12:00	長崎県	Nagasaki (Ohmura)	0.029
43	3/18 11:00 ~ 12:00	熊本県	Kumamoto (Uto)	0.027
44	3/18 11:00 ~ 12:00	大分県	Oita (Oita)	0.05
45	3/18 11:00 ~ 12:00	宮崎県	Miyazaki (Miyazaki)	0.026
46	3/18 11:00 ~ 12:00	鹿児島県	Kagoshima (Kagosh	0.034
47	3/18 11:00 ~ 12:00	沖縄県	Okinawa (Uruma)	0.021
1	3/18 12:00 ~ 13:00	北海道	Hokkaido (Sapporo	0.027
2	3/18 12:00 ~ 13:00	青森県	Aomori (Aomori)	0.02
3	3/18 12:00 ~ 13:00	岩手県	Iwate (Morioka)	0.028
4	3/18 12:00 ~ 13:00	宮城県	Miyagi (Sendai)	
5	3/18 12:00 ~ 13:00	秋田県	Akita (Akita)	0.033
6	3/18 12:00 ~ 13:00	山形県	Yamagata (Yamaga	0.04
7	3/18 12:00 ~ 13:00	福島県	Fukushima (Futaba-gun)	
8	3/18 12:00 ~ 13:00	茨城県	Ibaraki (Mito)	0.191
9	3/18 12:00 ~ 13:00	栃木県	Tochigi (Itsunomiya	0.169
10	3/18 12:00 ~ 13:00	群馬県	Gunma (Maebashi)	0.086
11	3/18 12:00 ~ 13:00	埼玉県	Saitama (Saitama)	0.058
12	3/18 12:00 ~ 13:00	千葉県	Chiba (Ichihara)	0.034
13	3/18 12:00 ~ 13:00	東京都	Tokyo (Shinjuku-kı	0.049
14	3/18 12:00 ~ 13:00	神奈川県	Kanagawa (Chigasa	0.05
15	3/18 12:00 ~ 13:00	新潟県	Niigata (Niigata)	0.046
16	3/18 12:00 ~ 13:00	富山県	Toyama (Imizu)	0.047
17	3/18 12:00 ~ 13:00	石川県	Ishikawa (Kanazawa	0.046
18	3/18 12:00 ~ 13:00	福井県	Fukui (Fukui)	0.044
19	3/18 12:00 ~ 13:00	山梨県	Yamanashi (Kofu)	0.043
20	3/18 12:00 ~ 13:00	長野県	Nagano (Nagano)	0.071
21	3/18 12:00 ~ 13:00	岐阜県	Gifu (Kakamigahara	0.06
22	3/18 12:00 ~ 13:00	静岡県	Shizuoka (Shizuoka	0.038
23	3/18 12:00 ~ 13:00	愛知県	Aichi (Nagoya)	0.038
24	3/18 12:00 ~ 13:00	三重県	Mie (Yokkaichi)	0.045
25	3/18 12:00 ~ 13:00	滋賀県	Shiga (Ohtsu)	0.032
26	3/18 12:00 ~ 13:00	京都府	Kyoto (Kyoto)	0.037
27	3/18 12:00 ~ 13:00	大阪府	Osaka (Osaka)	0.042
28	3/18 12:00 ~ 13:00	兵庫県	Hyogo (Kobe)	0.036
29	3/18 12:00 ~ 13:00	奈良県	Nara (Nara)	0.047
30	3/18 12:00 ~ 13:00	和歌山県	Wakayama (Wakaya	0.031
31	3/18 12:00 ~ 13:00	鳥取県	Tottori (Touhaku-g	0.058
32	3/18 12:00 ~ 13:00	島根県	Shimane (Matsue)	0.037
33	3/18 12:00 ~ 13:00	岡山県	Okayama (Okayama	0.048

34	3/18 12:00 ~ 13:00	広島県	Hiroshima (Hiroshin	0.047
35	3/18 12:00 ~ 13:00	山口県	Yamaguchi (Yamagı	0.092
36	3/18 12:00 ~ 13:00	徳島県	Tokushima (Tokush	0.037
37	3/18 12:00 ~ 13:00	香川県	Kagawa (Takamatsı	0.051
38	3/18 12:00 ~ 13:00	愛媛県	Ehime (Matsuyama,	0.047
39	3/18 12:00 ~ 13:00	高知県	Kochi (Kochi)	0.024
40	3/18 12:00 ~ 13:00	福岡県	Fukuoka (Dazaifu)	0.037
41	3/18 12:00 ~ 13:00	佐賀県	Saga (Saga)	0.04
42	3/18 12:00 ~ 13:00	長崎県	Nagasaki (Ohmura)	0.029
43	3/18 12:00 ~ 13:00	熊本県	Kumamoto (Uto)	0.027
44	3/18 12:00 ~ 13:00	大分県	Oita (Oita)	0.05
45	3/18 12:00 ~ 13:00	宮崎県	Miyazaki (Miyazaki)	0.026
46	3/18 12:00 ~ 13:00	鹿児島県	Kagoshima (Kagosh	0.034
47	3/18 12:00 ~ 13:00	沖縄県	Okinawa (Uruma)	0.021
1	3/18 13:00 ~ 14:00	北海道	Hokkaido (Sapporo,	0.027
2	3/18 13:00 ~ 14:00	青森県	Aomori (Aomori)	0.02
3	3/18 13:00 ~ 14:00	岩手県	Iwate (Morioka)	0.028
4	3/18 13:00 ~ 14:00	宮城県	Miyagi (Sendai)	
5	3/18 13:00 ~ 14:00	秋田県	Akita (Akita)	0.034
6	3/18 13:00 ~ 14:00	山形県	Yamagata (Yamaga	0.039
7	3/18 13:00 ~ 14:00	福島県	Fukushima (Futaba-gun)	
8	3/18 13:00 ~ 14:00	茨城県	Ibaraki (Mito)	0.19
9	3/18 13:00 ~ 14:00	栃木県	Tochigi (Itsunomiya	0.168
10	3/18 13:00 ~ 14:00	群馬県	Gunma (Maebashi)	0.086
11	3/18 13:00 ~ 14:00	埼玉県	Saitama (Saitama)	0.058
12	3/18 13:00 ~ 14:00	千葉県	Chiba (Ichihara)	0.034
13	3/18 13:00 ~ 14:00	東京都	Tokyo (Shinjuku-kı	0.049
14	3/18 13:00 ~ 14:00	神奈川県	Kanagawa (Chigasa	0.05
15	3/18 13:00 ~ 14:00	新潟県	Niigata (Niigata)	0.046
16	3/18 13:00 ~ 14:00	富山県	Toyama (Imizu)	0.047
17	3/18 13:00 ~ 14:00	石川県	Ishikawa (Kanazawa	0.046
18	3/18 13:00 ~ 14:00	福井県	Fukui (Fukui)	0.044
19	3/18 13:00 ~ 14:00	山梨県	Yamanashi (Kofu)	0.043
20	3/18 13:00 ~ 14:00	長野県	Nagano (Nagano)	0.071
21	3/18 13:00 ~ 14:00	岐阜県	Gifu (Kakamigahara	0.06
22	3/18 13:00 ~ 14:00	静岡県	Shizuoka (Shizuoka	0.038
23	3/18 13:00 ~ 14:00	愛知県	Aichi (Nagoya)	0.039
24	3/18 13:00 ~ 14:00	三重県	Mie (Yokkaichi)	0.045
25	3/18 13:00 ~ 14:00	滋賀県	Shiga (Ohtsu)	0.032
26	3/18 13:00 ~ 14:00	京都府	Kyoto (Kyoto)	0.037
27	3/18 13:00 ~ 14:00	大阪府	Osaka (Osaka)	0.042
28	3/18 13:00 ~ 14:00	兵庫県	Hyogo (Kobe)	0.036
29	3/18 13:00 ~ 14:00	奈良県	Nara (Nara)	0.047
30	3/18 13:00 ~ 14:00	和歌山県	Wakayama (Wakaya	0.031
31	3/18 13:00 ~ 14:00	鳥取県	Tottori (Touhaku-g	0.06
32	3/18 13:00 ~ 14:00	島根県	Shimane (Matsue)	0.036
33	3/18 13:00 ~ 14:00	岡山県	Okayama (Okayama	0.048
34	3/18 13:00 ~ 14:00	広島県	Hiroshima (Hiroshin	0.047
35	3/18 13:00 ~ 14:00	山口県	Yamaguchi (Yamagı	0.092
36	3/18 13:00 ~ 14:00	徳島県	Tokushima (Tokush	0.037
37	3/18 13:00 ~ 14:00	香川県	Kagawa (Takamatsı	0.052
38	3/18 13:00 ~ 14:00	愛媛県	Ehime (Matsuyama,	0.047
39	3/18 13:00 ~ 14:00	高知県	Kochi (Kochi)	0.024
40	3/18 13:00 ~ 14:00	福岡県	Fukuoka (Dazaifu)	0.036
41	3/18 13:00 ~ 14:00	佐賀県	Saga (Saga)	0.04
42	3/18 13:00 ~ 14:00	長崎県	Nagasaki (Ohmura)	0.029
43	3/18 13:00 ~ 14:00	熊本県	Kumamoto (Uto)	0.027

44	3/18 13:00 ~ 14:00	大分県	Oita (Oita)	0.05
45	3/18 13:00 ~ 14:00	宮崎県	Miyazaki (Miyazaki)	0.026
46	3/18 13:00 ~ 14:00	鹿児島県	Kagoshima (Kagosh	0.034
47	3/18 13:00 ~ 14:00	沖縄県	Okinawa (Uruma)	0.021
1	3/18 14:00 ~ 15:00	北海道	Hokkaido (Sapporo)	0.027
2	3/18 14:00 ~ 15:00	青森県	Aomori (Aomori)	0.019
3	3/18 14:00 ~ 15:00	岩手県	Iwate (Morioka)	0.028
4	3/18 14:00 ~ 15:00	宮城県	Miyagi (Sendai)	
5	3/18 14:00 ~ 15:00	秋田県	Akita (Akita)	0.033
6	3/18 14:00 ~ 15:00	山形県	Yamagata (Yamaga	0.04
7	3/18 14:00 ~ 15:00	福島県	Fukushima (Futaba-gun)	
8	3/18 14:00 ~ 15:00	茨城県	Ibaraki (Mito)	0.189
9	3/18 14:00 ~ 15:00	栃木県	Tochigi (Itsunomiya	0.167
10	3/18 14:00 ~ 15:00	群馬県	Gunma (Maebashi)	0.086
11	3/18 14:00 ~ 15:00	埼玉県	Saitama (Saitama)	0.058
12	3/18 14:00 ~ 15:00	千葉県	Chiba (Ichihara)	0.034
13	3/18 14:00 ~ 15:00	東京都	Tokyo (Shinjuku-ku	0.048
14	3/18 14:00 ~ 15:00	神奈川県	Kanagawa (Chigasa	0.05
15	3/18 14:00 ~ 15:00	新潟県	Niigata (Niigata)	0.046
16	3/18 14:00 ~ 15:00	富山県	Toyama (Imizu)	0.047
17	3/18 14:00 ~ 15:00	石川県	Ishikawa (Kanazawa	0.046
18	3/18 14:00 ~ 15:00	福井県	Fukui (Fukui)	0.044
19	3/18 14:00 ~ 15:00	山梨県	Yamanashi (Kofu)	0.043
20	3/18 14:00 ~ 15:00	長野県	Nagano (Nagano)	0.071
21	3/18 14:00 ~ 15:00	岐阜県	Gifu (Kakamigahara	0.06
22	3/18 14:00 ~ 15:00	静岡県	Shizuoka (Shizuoka	0.037
23	3/18 14:00 ~ 15:00	愛知県	Aichi (Nagoya)	0.039
24	3/18 14:00 ~ 15:00	三重県	Mie (Yokkaichi)	0.045
25	3/18 14:00 ~ 15:00	滋賀県	Shiga (Ohtsu)	0.032
26	3/18 14:00 ~ 15:00	京都府	Kyoto (Kyoto)	0.037
27	3/18 14:00 ~ 15:00	大阪府	Osaka (Osaka)	0.042
28	3/18 14:00 ~ 15:00	兵庫県	Hyogo (Kobe)	0.036
29	3/18 14:00 ~ 15:00	奈良県	Nara (Nara)	0.047
30	3/18 14:00 ~ 15:00	和歌山県	Wakayama (Wakaya	0.031
31	3/18 14:00 ~ 15:00	鳥取県	Tottori (Touhaku-g	0.061
32	3/18 14:00 ~ 15:00	島根県	Shimane (Matsue)	0.037
33	3/18 14:00 ~ 15:00	岡山県	Okayama (Okayama	0.048
34	3/18 14:00 ~ 15:00	広島県	Hiroshima (Hiroshin	0.047
35	3/18 14:00 ~ 15:00	山口県	Yamaguchi (Yamagı	0.092
36	3/18 14:00 ~ 15:00	徳島県	Tokushima (Tokush	0.037
37	3/18 14:00 ~ 15:00	香川県	Kagawa (Takamatsı	0.052
38	3/18 14:00 ~ 15:00	愛媛県	Ehime (Matsuyama)	0.047
39	3/18 14:00 ~ 15:00	高知県	Kochi (Kochi)	0.024
40	3/18 14:00 ~ 15:00	福岡県	Fukuoka (Dazaifu)	0.036
41	3/18 14:00 ~ 15:00	佐賀県	Saga (Saga)	0.04
42	3/18 14:00 ~ 15:00	長崎県	Nagasaki (Ohmura)	0.029
43	3/18 14:00 ~ 15:00	熊本県	Kumamoto (Uto)	0.027
44	3/18 14:00 ~ 15:00	大分県	Oita (Oita)	0.05
45	3/18 14:00 ~ 15:00	宮崎県	Miyazaki (Miyazaki)	0.026
46	3/18 14:00 ~ 15:00	鹿児島県	Kagoshima (Kagosh	0.034
47	3/18 14:00 ~ 15:00	沖縄県	Okinawa (Uruma)	0.02
1	3/18 15:00 ~ 16:00	北海道	Hokkaido (Sapporo)	0.027
2	3/18 15:00 ~ 16:00	青森県	Aomori (Aomori)	0.019
3	3/18 15:00 ~ 16:00	岩手県	Iwate (Morioka)	0.028
4	3/18 15:00 ~ 16:00	宮城県	Miyagi (Sendai)	
5	3/18 15:00 ~ 16:00	秋田県	Akita (Akita)	0.034
6	3/18 15:00 ~ 16:00	山形県	Yamagata (Yamaga	0.04

7	3/18 15:00 ~ 16:00	福島県	Fukushima (Futaba-gun)	
8	3/18 15:00 ~ 16:00	茨城県	Ibaraki (Mito)	0.188
9	3/18 15:00 ~ 16:00	栃木県	Tochigi (Itsunomiya	0.166
10	3/18 15:00 ~ 16:00	群馬県	Gunma (Maebashi)	0.085
11	3/18 15:00 ~ 16:00	埼玉県	Saitama (Saitama)	
12	3/18 15:00 ~ 16:00	千葉県	Chiba (Ichihara)	0.034
13	3/18 15:00 ~ 16:00	東京都	Tokyo (Shinjuku-ku	0.048
14	3/18 15:00 ~ 16:00	神奈川県	Kanagawa (Chigasa	0.05
15	3/18 15:00 ~ 16:00	新潟県	Niigata (Niigata)	0.046
16	3/18 15:00 ~ 16:00	富山県	Toyama (Imizu)	0.047
17	3/18 15:00 ~ 16:00	石川県	Ishikawa (Kanazawa	0.046
18	3/18 15:00 ~ 16:00	福井県	Fukui (Fukui)	0.044
19	3/18 15:00 ~ 16:00	山梨県	Yamanashi (Kofu)	0.043
20	3/18 15:00 ~ 16:00	長野県	Nagano (Nagano)	0.071
21	3/18 15:00 ~ 16:00	岐阜県	Gifu (Kakamigahara	0.06
22	3/18 15:00 ~ 16:00	静岡県	Shizuoka (Shizuoka	0.037
23	3/18 15:00 ~ 16:00	愛知県	Aichi (Nagoya)	0.039
24	3/18 15:00 ~ 16:00	三重県	Mie (Yokkaichi)	0.045
25	3/18 15:00 ~ 16:00	滋賀県	Shiga (Ohtsu)	0.032
26	3/18 15:00 ~ 16:00	京都府	Kyoto (Kyoto)	0.037
27	3/18 15:00 ~ 16:00	大阪府	Osaka (Osaka)	0.042
28	3/18 15:00 ~ 16:00	兵庫県	Hyogo (Kobe)	0.036
29	3/18 15:00 ~ 16:00	奈良県	Nara (Nara)	0.047
30	3/18 15:00 ~ 16:00	和歌山県	Wakayama (Wakaya	0.031
31	3/18 15:00 ~ 16:00	鳥取県	Tottori (Touhaku-g	0.062
32	3/18 15:00 ~ 16:00	島根県	Shimane (Matsue)	0.036
33	3/18 15:00 ~ 16:00	岡山県	Okayama (Okayama	0.048
34	3/18 15:00 ~ 16:00	広島県	Hiroshima (Hiroshin	0.046
35	3/18 15:00 ~ 16:00	山口県	Yamaguchi (Yamagu	0.092
36	3/18 15:00 ~ 16:00	徳島県	Tokushima (Tokush	0.037
37	3/18 15:00 ~ 16:00	香川県	Kagawa (Takamatsu	0.051
38	3/18 15:00 ~ 16:00	愛媛県	Ehime (Matsuyama)	0.047
39	3/18 15:00 ~ 16:00	高知県	Kochi (Kochi)	0.024
40	3/18 15:00 ~ 16:00	福岡県	Fukuoka (Dazaifu)	0.036
41	3/18 15:00 ~ 16:00	佐賀県	Saga (Saga)	0.04
42	3/18 15:00 ~ 16:00	長崎県	Nagasaki (Ohmura)	0.029
43	3/18 15:00 ~ 16:00	熊本県	Kumamoto (Uto)	0.027
44	3/18 15:00 ~ 16:00	大分県	Oita (Oita)	0.05
45	3/18 15:00 ~ 16:00	宮崎県	Miyazaki (Miyazaki)	0.026
46	3/18 15:00 ~ 16:00	鹿児島県	Kagoshima (Kagosh	0.034
47	3/18 15:00 ~ 16:00	沖縄県	Okinawa (Uruma)	0.021
1	3/18 16:00 ~ 17:00	北海道	Hokkaido (Sapporo)	0.027
2	3/18 16:00 ~ 17:00	青森県	Aomori (Aomori)	0.019
3	3/18 16:00 ~ 17:00	岩手県	Iwate (Morioka)	0.028
4	3/18 16:00 ~ 17:00	宮城県	Miyagi (Sendai)	
5	3/18 16:00 ~ 17:00	秋田県	Akita (Akita)	0.033
6	3/18 16:00 ~ 17:00	山形県	Yamagata (Yamaga	0.04
7	3/18 16:00 ~ 17:00	福島県	Fukushima (Futaba-gun)	
8	3/18 16:00 ~ 17:00	茨城県	Ibaraki (Mito)	0.187
9	3/18 16:00 ~ 17:00	栃木県	Tochigi (Itsunomiya	0.165
10	3/18 16:00 ~ 17:00	群馬県	Gunma (Maebashi)	0.085
11	3/18 16:00 ~ 17:00	埼玉県	Saitama (Saitama)	
12	3/18 16:00 ~ 17:00	千葉県	Chiba (Ichihara)	0.034
13	3/18 16:00 ~ 17:00	東京都	Tokyo (Shinjuku-ku	0.048
14	3/18 16:00 ~ 17:00	神奈川県	Kanagawa (Chigasa	0.05
15	3/18 16:00 ~ 17:00	新潟県	Niigata (Niigata)	0.046
16	3/18 16:00 ~ 17:00	富山県	Toyama (Imizu)	0.047

17	3/18 16:00 ~ 17:00	石川県	Ishikawa (Kanazawa	0.046
18	3/18 16:00 ~ 17:00	福井県	Fukui (Fukui)	0.045
19	3/18 16:00 ~ 17:00	山梨県	Yamanashi (Kofu)	0.044
20	3/18 16:00 ~ 17:00	長野県	Nagano (Nagano)	0.071
21	3/18 16:00 ~ 17:00	岐阜県	Gifu (Kakamigahara	0.06
22	3/18 16:00 ~ 17:00	静岡県	Shizuoka (Shizuoka	0.037
23	3/18 16:00 ~ 17:00	愛知県	Aichi (Nagoya)	0.039
24	3/18 16:00 ~ 17:00	三重県	Mie (Yokkaichi)	0.045
25	3/18 16:00 ~ 17:00	滋賀県	Shiga (Ohtsu)	0.033
26	3/18 16:00 ~ 17:00	京都府	Kyoto (Kyoto)	0.037
27	3/18 16:00 ~ 17:00	大阪府	Osaka (Osaka)	0.042
28	3/18 16:00 ~ 17:00	兵庫県	Hyogo (Kobe)	0.036
29	3/18 16:00 ~ 17:00	奈良県	Nara (Nara)	0.047
30	3/18 16:00 ~ 17:00	和歌山県	Wakayama (Wakaya	0.031
31	3/18 16:00 ~ 17:00	鳥取県	Tottori (Touhaku-g	0.062
32	3/18 16:00 ~ 17:00	島根県	Shimane (Matsue)	0.036
33	3/18 16:00 ~ 17:00	岡山県	Okayama (Okayama	0.048
34	3/18 16:00 ~ 17:00	広島県	Hiroshima (Hiroshin	0.046
35	3/18 16:00 ~ 17:00	山口県	Yamaguchi (Yamagu	0.092
36	3/18 16:00 ~ 17:00	徳島県	Tokushima (Tokush	0.037
37	3/18 16:00 ~ 17:00	香川県	Kagawa (Takamatsu	0.052
38	3/18 16:00 ~ 17:00	愛媛県	Ehime (Matsuyama)	0.047
39	3/18 16:00 ~ 17:00	高知県	Kochi (Kochi)	0.024
40	3/18 16:00 ~ 17:00	福岡県	Fukuoka (Dazaifu)	0.036
41	3/18 16:00 ~ 17:00	佐賀県	Saga (Saga)	0.04
42	3/18 16:00 ~ 17:00	長崎県	Nagasaki (Ohmura)	0.029
43	3/18 16:00 ~ 17:00	熊本県	Kumamoto (Uto)	0.027
44	3/18 16:00 ~ 17:00	大分県	Oita (Oita)	0.05
45	3/18 16:00 ~ 17:00	宮崎県	Miyazaki (Miyazaki)	0.026
46	3/18 16:00 ~ 17:00	鹿児島県	Kagoshima (Kagosh	0.034
47	3/18 16:00 ~ 17:00	沖縄県	Okinawa (Uruma)	0.02
1	3/18 17:00 ~ 18:00	北海道	Hokkaido (Sapporo)	0.027
2	3/18 17:00 ~ 18:00	青森県	Aomori (Aomori)	0.019
3	3/18 17:00 ~ 18:00	岩手県	Iwate (Morioka)	0.028
4	3/18 17:00 ~ 18:00	宮城県	Miyagi (Sendai)	
5	3/18 17:00 ~ 18:00	秋田県	Akita (Akita)	0.034
6	3/18 17:00 ~ 18:00	山形県	Yamagata (Yamaga	0.039
7	3/18 17:00 ~ 18:00	福島県	Fukushima (Futaba-gun)	
8	3/18 17:00 ~ 18:00	茨城県	Ibaraki (Mito)	0.186
9	3/18 17:00 ~ 18:00	栃木県	Tochigi (Itsunomiya	0.165
10	3/18 17:00 ~ 18:00	群馬県	Gunma (Maebashi)	0.084
11	3/18 17:00 ~ 18:00	埼玉県	Saitama (Saitama)	
12	3/18 17:00 ~ 18:00	千葉県	Chiba (Ichihara)	0.034
13	3/18 17:00 ~ 18:00	東京都	Tokyo (Shinjuku-ku	0.047
14	3/18 17:00 ~ 18:00	神奈川県	Kanagawa (Chigasa	0.05
15	3/18 17:00 ~ 18:00	新潟県	Niigata (Niigata)	0.046
16	3/18 17:00 ~ 18:00	富山県	Toyama (Imizu)	0.047
17	3/18 17:00 ~ 18:00	石川県	Ishikawa (Kanazawa	0.046
18	3/18 17:00 ~ 18:00	福井県	Fukui (Fukui)	0.045
19	3/18 17:00 ~ 18:00	山梨県	Yamanashi (Kofu)	0.044
20	3/18 17:00 ~ 18:00	長野県	Nagano (Nagano)	0.071
21	3/18 17:00 ~ 18:00	岐阜県	Gifu (Kakamigahara	0.06
22	3/18 17:00 ~ 18:00	静岡県	Shizuoka (Shizuoka	0.037
23	3/18 17:00 ~ 18:00	愛知県	Aichi (Nagoya)	0.039
24	3/18 17:00 ~ 18:00	三重県	Mie (Yokkaichi)	0.046
25	3/18 17:00 ~ 18:00	滋賀県	Shiga (Ohtsu)	0.033
26	3/18 17:00 ~ 18:00	京都府	Kyoto (Kyoto)	0.037

27	3/18 17:00 ~ 18:00	大阪府	Osaka (Osaka)	0.042
28	3/18 17:00 ~ 18:00	兵庫県	Hyogo (Kobe)	0.036
29	3/18 17:00 ~ 18:00	奈良県	Nara (Nara)	0.047
30	3/18 17:00 ~ 18:00	和歌山県	Wakayama (Wakaya	0.031
31	3/18 17:00 ~ 18:00	鳥取県	Tottori (Touhaku-g	0.063
32	3/18 17:00 ~ 18:00	島根県	Shimane (Matsue)	0.036
33	3/18 17:00 ~ 18:00	岡山県	Okayama (Okayama	0.048
34	3/18 17:00 ~ 18:00	広島県	Hiroshima (Hiroshin	0.046
35	3/18 17:00 ~ 18:00	山口県	Yamaguchi (Yamagı	0.092
36	3/18 17:00 ~ 18:00	徳島県	Tokushima (Tokush	0.037
37	3/18 17:00 ~ 18:00	香川県	Kagawa (Takamatsı	0.052
38	3/18 17:00 ~ 18:00	愛媛県	Ehime (Matsuyama)	0.047
39	3/18 17:00 ~ 18:00	高知県	Kochi (Kochi)	0.024
40	3/18 17:00 ~ 18:00	福岡県	Fukuoka (Dazaifu)	0.036
41	3/18 17:00 ~ 18:00	佐賀県	Saga (Saga)	0.04
42	3/18 17:00 ~ 18:00	長崎県	Nagasaki (Ohmura)	0.029
43	3/18 17:00 ~ 18:00	熊本県	Kumamoto (Uto)	0.027
44	3/18 17:00 ~ 18:00	大分県	Oita (Oita)	0.05
45	3/18 17:00 ~ 18:00	宮崎県	Miyazaki (Miyazaki)	0.026
46	3/18 17:00 ~ 18:00	鹿児島県	Kagoshima (Kagosh	0.034
47	3/18 17:00 ~ 18:00	沖縄県	Okinawa (Uruma)	0.021
1	3/18 18:00 ~ 19:00	北海道	Hokkaido (Sapporo)	0.027
2	3/18 18:00 ~ 19:00	青森県	Aomori (Aomori)	0.019
3	3/18 18:00 ~ 19:00	岩手県	Iwate (Morioka)	0.028
4	3/18 18:00 ~ 19:00	宮城県	Miyagi (Sendai)	
5	3/18 18:00 ~ 19:00	秋田県	Akita (Akita)	0.034
6	3/18 18:00 ~ 19:00	山形県	Yamagata (Yamaga	0.039
7	3/18 18:00 ~ 19:00	福島県	Fukushima (Futaba-gun)	
8	3/18 18:00 ~ 19:00	茨城県	Ibaraki (Mito)	0.186
9	3/18 18:00 ~ 19:00	栃木県	Tochigi (Itsunomiya	0.165
10	3/18 18:00 ~ 19:00	群馬県	Gunma (Maebashi)	0.084
11	3/18 18:00 ~ 19:00	埼玉県	Saitama (Saitama)	0.058
12	3/18 18:00 ~ 19:00	千葉県	Chiba (Ichihara)	0.034
13	3/18 18:00 ~ 19:00	東京都	Tokyo (Shinjuku-kı	0.048
14	3/18 18:00 ~ 19:00	神奈川県	Kanagawa (Chigasa	0.05
15	3/18 18:00 ~ 19:00	新潟県	Niigata (Niigata)	0.046
16	3/18 18:00 ~ 19:00	富山県	Toyama (Imizu)	0.047
17	3/18 18:00 ~ 19:00	石川県	Ishikawa (Kanazawa	0.046
18	3/18 18:00 ~ 19:00	福井県	Fukui (Fukui)	0.045
19	3/18 18:00 ~ 19:00	山梨県	Yamanashi (Kofu)	0.044
20	3/18 18:00 ~ 19:00	長野県	Nagano (Nagano)	0.071
21	3/18 18:00 ~ 19:00	岐阜県	Gifu (Kakamigahara	0.06
22	3/18 18:00 ~ 19:00	静岡県	Shizuoka (Shizuoka	0.036
23	3/18 18:00 ~ 19:00	愛知県	Aichi (Nagoya)	0.039
24	3/18 18:00 ~ 19:00	三重県	Mie (Yokkaichi)	0.046
25	3/18 18:00 ~ 19:00	滋賀県	Shiga (Ohtsu)	0.032
26	3/18 18:00 ~ 19:00	京都府	Kyoto (Kyoto)	0.037
27	3/18 18:00 ~ 19:00	大阪府	Osaka (Osaka)	0.042
28	3/18 18:00 ~ 19:00	兵庫県	Hyogo (Kobe)	0.037
29	3/18 18:00 ~ 19:00	奈良県	Nara (Nara)	0.047
30	3/18 18:00 ~ 19:00	和歌山県	Wakayama (Wakaya	0.031
31	3/18 18:00 ~ 19:00	鳥取県	Tottori (Touhaku-g	0.063
32	3/18 18:00 ~ 19:00	島根県	Shimane (Matsue)	0.037
33	3/18 18:00 ~ 19:00	岡山県	Okayama (Okayama	0.048
34	3/18 18:00 ~ 19:00	広島県	Hiroshima (Hiroshin	0.046
35	3/18 18:00 ~ 19:00	山口県	Yamaguchi (Yamagı	0.093
36	3/18 18:00 ~ 19:00	徳島県	Tokushima (Tokush	0.037

37	3/18 18:00 ~ 19:00	香川県	Kagawa (Takamatsı	0.052
38	3/18 18:00 ~ 19:00	愛媛県	Ehime (Matsuyama	0.047
39	3/18 18:00 ~ 19:00	高知県	Kochi (Kochi)	0.024
40	3/18 18:00 ~ 19:00	福岡県	Fukuoka (Dazaifu)	0.036
41	3/18 18:00 ~ 19:00	佐賀県	Saga (Saga)	0.04
42	3/18 18:00 ~ 19:00	長崎県	Nagasaki (Ohmura)	0.029
43	3/18 18:00 ~ 19:00	熊本県	Kumamoto (Uto)	0.027
44	3/18 18:00 ~ 19:00	大分県	Oita (Oita)	0.05
45	3/18 18:00 ~ 19:00	宮崎県	Miyazaki (Miyazaki)	0.026
46	3/18 18:00 ~ 19:00	鹿児島県	Kagoshima (Kagosh	0.034
47	3/18 18:00 ~ 19:00	沖縄県	Okinawa (Uruma)	0.021
1	3/18 19:00 ~ 20:00	北海道	Hokkaido (Sapporo	0.027
2	3/18 19:00 ~ 20:00	青森県	Aomori (Aomori)	0.019
3	3/18 19:00 ~ 20:00	岩手県	Iwate (Morioka)	0.028
4	3/18 19:00 ~ 20:00	宮城県	Miyagi (Sendai)	
5	3/18 19:00 ~ 20:00	秋田県	Akita (Akita)	0.034
6	3/18 19:00 ~ 20:00	山形県	Yamagata (Yamaga	0.04
7	3/18 19:00 ~ 20:00	福島県	Fukushima (Futaba-gun)	
8	3/18 19:00 ~ 20:00	茨城県	Ibaraki (Mito)	0.185
9	3/18 19:00 ~ 20:00	栃木県	Tochigi (Itsunomiya	0.164
10	3/18 19:00 ~ 20:00	群馬県	Gunma (Maebashi)	0.083
11	3/18 19:00 ~ 20:00	埼玉県	Saitama (Saitama)	0.058
12	3/18 19:00 ~ 20:00	千葉県	Chiba (Ichihara)	0.034
13	3/18 19:00 ~ 20:00	東京都	Tokyo (Shinjuku-kı	0.047
14	3/18 19:00 ~ 20:00	神奈川県	Kanagawa (Chigasa	0.049
15	3/18 19:00 ~ 20:00	新潟県	Niigata (Niigata)	0.046
16	3/18 19:00 ~ 20:00	富山県	Toyama (Imizu)	0.047
17	3/18 19:00 ~ 20:00	石川県	Ishikawa (Kanazawa	0.046
18	3/18 19:00 ~ 20:00	福井県	Fukui (Fukui)	0.045
19	3/18 19:00 ~ 20:00	山梨県	Yamanashi (Kofu)	0.044
20	3/18 19:00 ~ 20:00	長野県	Nagano (Nagano)	0.072
21	3/18 19:00 ~ 20:00	岐阜県	Gifu (Kakamigahara	0.06
22	3/18 19:00 ~ 20:00	静岡県	Shizuoka (Shizuoka	0.036
23	3/18 19:00 ~ 20:00	愛知県	Aichi (Nagoya)	0.038
24	3/18 19:00 ~ 20:00	三重県	Mie (Yokkaichi)	0.046
25	3/18 19:00 ~ 20:00	滋賀県	Shiga (Ohtsu)	0.032
26	3/18 19:00 ~ 20:00	京都府	Kyoto (Kyoto)	0.038
27	3/18 19:00 ~ 20:00	大阪府	Osaka (Osaka)	0.042
28	3/18 19:00 ~ 20:00	兵庫県	Hyogo (Kobe)	0.037
29	3/18 19:00 ~ 20:00	奈良県	Nara (Nara)	0.047
30	3/18 19:00 ~ 20:00	和歌山県	Wakayama (Wakaya	0.031
31	3/18 19:00 ~ 20:00	鳥取県	Tottori (Touhaku-g	0.063
32	3/18 19:00 ~ 20:00	島根県	Shimane (Matsue)	0.037
33	3/18 19:00 ~ 20:00	岡山県	Okayama (Okayama	0.048
34	3/18 19:00 ~ 20:00	広島県	Hiroshima (Hiroshin	0.046
35	3/18 19:00 ~ 20:00	山口県	Yamaguchi (Yamagı	0.092
36	3/18 19:00 ~ 20:00	徳島県	Tokushima (Tokush	0.037
37	3/18 19:00 ~ 20:00	香川県	Kagawa (Takamatsı	0.052
38	3/18 19:00 ~ 20:00	愛媛県	Ehime (Matsuyama	0.047
39	3/18 19:00 ~ 20:00	高知県	Kochi (Kochi)	0.024
40	3/18 19:00 ~ 20:00	福岡県	Fukuoka (Dazaifu)	0.036
41	3/18 19:00 ~ 20:00	佐賀県	Saga (Saga)	0.039
42	3/18 19:00 ~ 20:00	長崎県	Nagasaki (Ohmura)	0.029
43	3/18 19:00 ~ 20:00	熊本県	Kumamoto (Uto)	0.027
44	3/18 19:00 ~ 20:00	大分県	Oita (Oita)	0.05
45	3/18 19:00 ~ 20:00	宮崎県	Miyazaki (Miyazaki)	0.027
46	3/18 19:00 ~ 20:00	鹿児島県	Kagoshima (Kagosh	0.034

47	3/18 19:00 ~ 20:00	沖縄県	Okinawa (Uruma)	0.02
1	3/18 20:00 ~ 21:00	北海道	Hokkaido (Sapporo)	0.027
2	3/18 20:00 ~ 21:00	青森県	Aomori (Aomori)	0.019
3	3/18 20:00 ~ 21:00	岩手県	Iwate (Morioka)	0.028
4	3/18 20:00 ~ 21:00	宮城県	Miyagi (Sendai)	
5	3/18 20:00 ~ 21:00	秋田県	Akita (Akita)	0.034
6	3/18 20:00 ~ 21:00	山形県	Yamagata (Yamaga	0.04
7	3/18 20:00 ~ 21:00	福島県	Fukushima (Futaba-gun)	
8	3/18 20:00 ~ 21:00	茨城県	Ibaraki (Mito)	0.185
9	3/18 20:00 ~ 21:00	栃木県	Tochigi (Itsunomiya	0.164
10	3/18 20:00 ~ 21:00	群馬県	Gunma (Maebashi)	0.083
11	3/18 20:00 ~ 21:00	埼玉県	Saitama (Saitama)	0.058
12	3/18 20:00 ~ 21:00	千葉県	Chiba (Ichihara)	0.034
13	3/18 20:00 ~ 21:00	東京都	Tokyo (Shinjuku-ku	0.047
14	3/18 20:00 ~ 21:00	神奈川県	Kanagawa (Chigasa	0.049
15	3/18 20:00 ~ 21:00	新潟県	Niigata (Niigata)	0.046
16	3/18 20:00 ~ 21:00	富山県	Toyama (Imizu)	0.047
17	3/18 20:00 ~ 21:00	石川県	Ishikawa (Kanazawa	0.047
18	3/18 20:00 ~ 21:00	福井県	Fukui (Fukui)	0.045
19	3/18 20:00 ~ 21:00	山梨県	Yamanashi (Kofu)	0.044
20	3/18 20:00 ~ 21:00	長野県	Nagano (Nagano)	0.071
21	3/18 20:00 ~ 21:00	岐阜県	Gifu (Kakamigahara	0.06
22	3/18 20:00 ~ 21:00	静岡県	Shizuoka (Shizuoka	0.036
23	3/18 20:00 ~ 21:00	愛知県	Aichi (Nagoya)	0.039
24	3/18 20:00 ~ 21:00	三重県	Mie (Yokkaichi)	0.046
25	3/18 20:00 ~ 21:00	滋賀県	Shiga (Ohtsu)	0.032
26	3/18 20:00 ~ 21:00	京都府	Kyoto (Kyoto)	0.038
27	3/18 20:00 ~ 21:00	大阪府	Osaka (Osaka)	0.042
28	3/18 20:00 ~ 21:00	兵庫県	Hyogo (Kobe)	0.037
29	3/18 20:00 ~ 21:00	奈良県	Nara (Nara)	0.047
30	3/18 20:00 ~ 21:00	和歌山県	Wakayama (Wakaya	0.031
31	3/18 20:00 ~ 21:00	鳥取県	Tottori (Touhaku-g	0.063
32	3/18 20:00 ~ 21:00	島根県	Shimane (Matsue)	0.037
33	3/18 20:00 ~ 21:00	岡山県	Okayama (Okayama	0.048
34	3/18 20:00 ~ 21:00	広島県	Hiroshima (Hiroshin	0.046
35	3/18 20:00 ~ 21:00	山口県	Yamaguchi (Yamagu	0.093
36	3/18 20:00 ~ 21:00	徳島県	Tokushima (Tokush	0.037
37	3/18 20:00 ~ 21:00	香川県	Kagawa (Takamatsu	0.052
38	3/18 20:00 ~ 21:00	愛媛県	Ehime (Matsuyama)	0.048
39	3/18 20:00 ~ 21:00	高知県	Kochi (Kochi)	0.025
40	3/18 20:00 ~ 21:00	福岡県	Fukuoka (Dazaifu)	0.036
41	3/18 20:00 ~ 21:00	佐賀県	Saga (Saga)	0.039
42	3/18 20:00 ~ 21:00	長崎県	Nagasaki (Ohmura)	0.029
43	3/18 20:00 ~ 21:00	熊本県	Kumamoto (Uto)	0.027
44	3/18 20:00 ~ 21:00	大分県	Oita (Oita)	0.05
45	3/18 20:00 ~ 21:00	宮崎県	Miyazaki (Miyazaki)	0.026
46	3/18 20:00 ~ 21:00	鹿児島県	Kagoshima (Kagosh	0.034
47	3/18 20:00 ~ 21:00	沖縄県	Okinawa (Uruma)	0.021
1	3/18 21:00 ~ 22:00	北海道	Hokkaido (Sapporo)	0.027
2	3/18 21:00 ~ 22:00	青森県	Aomori (Aomori)	0.019
3	3/18 21:00 ~ 22:00	岩手県	Iwate (Morioka)	0.028
4	3/18 21:00 ~ 22:00	宮城県	Miyagi (Sendai)	
5	3/18 21:00 ~ 22:00	秋田県	Akita (Akita)	0.034
6	3/18 21:00 ~ 22:00	山形県	Yamagata (Yamaga	0.04
7	3/18 21:00 ~ 22:00	福島県	Fukushima (Futaba-gun)	
8	3/18 21:00 ~ 22:00	茨城県	Ibaraki (Mito)	0.184
9	3/18 21:00 ~ 22:00	栃木県	Tochigi (Itsunomiya	0.164

10	3/18 21:00 ~ 22:00	群馬県	Gunma (Maebashi)	0.083
11	3/18 21:00 ~ 22:00	埼玉県	Saitama (Saitama)	0.057
12	3/18 21:00 ~ 22:00	千葉県	Chiba (Ichihara)	0.034
13	3/18 21:00 ~ 22:00	東京都	Tokyo (Shinjuku-ku	0.047
14	3/18 21:00 ~ 22:00	神奈川県	Kanagawa (Chigasa	0.049
15	3/18 21:00 ~ 22:00	新潟県	Niigata (Niigata)	0.046
16	3/18 21:00 ~ 22:00	富山県	Toyama (Imizu)	0.047
17	3/18 21:00 ~ 22:00	石川県	Ishikawa (Kanazawa	0.047
18	3/18 21:00 ~ 22:00	福井県	Fukui (Fukui)	0.045
19	3/18 21:00 ~ 22:00	山梨県	Yamanashi (Kofu)	0.044
20	3/18 21:00 ~ 22:00	長野県	Nagano (Nagano)	0.072
21	3/18 21:00 ~ 22:00	岐阜県	Gifu (Kakamigahara	0.06
22	3/18 21:00 ~ 22:00	静岡県	Shizuoka (Shizuoka	0.037
23	3/18 21:00 ~ 22:00	愛知県	Aichi (Nagoya)	0.039
24	3/18 21:00 ~ 22:00	三重県	Mie (Yokkaichi)	0.046
25	3/18 21:00 ~ 22:00	滋賀県	Shiga (Ohtsu)	0.033
26	3/18 21:00 ~ 22:00	京都府	Kyoto (Kyoto)	0.038
27	3/18 21:00 ~ 22:00	大阪府	Osaka (Osaka)	0.042
28	3/18 21:00 ~ 22:00	兵庫県	Hyogo (Kobe)	0.037
29	3/18 21:00 ~ 22:00	奈良県	Nara (Nara)	0.047
30	3/18 21:00 ~ 22:00	和歌山県	Wakayama (Wakaya	0.031
31	3/18 21:00 ~ 22:00	鳥取県	Tottori (Touhaku-g	0.063
32	3/18 21:00 ~ 22:00	島根県	Shimane (Matsue)	0.037
33	3/18 21:00 ~ 22:00	岡山県	Okayama (Okayama	0.048
34	3/18 21:00 ~ 22:00	広島県	Hiroshima (Hiroshin	0.047
35	3/18 21:00 ~ 22:00	山口県	Yamaguchi (Yamagu	0.093
36	3/18 21:00 ~ 22:00	徳島県	Tokushima (Tokush	0.038
37	3/18 21:00 ~ 22:00	香川県	Kagawa (Takamatsu	0.052
38	3/18 21:00 ~ 22:00	愛媛県	Ehime (Matsuyama)	0.049
39	3/18 21:00 ~ 22:00	高知県	Kochi (Kochi)	0.025
40	3/18 21:00 ~ 22:00	福岡県	Fukuoka (Dazaifu)	0.036
41	3/18 21:00 ~ 22:00	佐賀県	Saga (Saga)	0.04
42	3/18 21:00 ~ 22:00	長崎県	Nagasaki (Ohmura)	0.029
43	3/18 21:00 ~ 22:00	熊本県	Kumamoto (Uto)	0.027
44	3/18 21:00 ~ 22:00	大分県	Oita (Oita)	0.05
45	3/18 21:00 ~ 22:00	宮崎県	Miyazaki (Miyazaki)	0.026
46	3/18 21:00 ~ 22:00	鹿児島県	Kagoshima (Kagosh	0.034
47	3/18 21:00 ~ 22:00	沖縄県	Okinawa (Uruma)	0.021
1	3/18 22:00 ~ 23:00	北海道	Hokkaido (Sapporo)	0.028
2	3/18 22:00 ~ 23:00	青森県	Aomori (Aomori)	0.019
3	3/18 22:00 ~ 23:00	岩手県	Iwate (Morioka)	0.028
4	3/18 22:00 ~ 23:00	宮城県	Miyagi (Sendai)	
5	3/18 22:00 ~ 23:00	秋田県	Akita (Akita)	0.034
6	3/18 22:00 ~ 23:00	山形県	Yamagata (Yamaga	0.04
7	3/18 22:00 ~ 23:00	福島県	Fukushima (Futaba-gun)	
8	3/18 22:00 ~ 23:00	茨城県	Ibaraki (Mito)	0.184
9	3/18 22:00 ~ 23:00	栃木県	Tochigi (Itsunomiya	0.163
10	3/18 22:00 ~ 23:00	群馬県	Gunma (Maebashi)	0.083
11	3/18 22:00 ~ 23:00	埼玉県	Saitama (Saitama)	0.057
12	3/18 22:00 ~ 23:00	千葉県	Chiba (Ichihara)	0.034
13	3/18 22:00 ~ 23:00	東京都	Tokyo (Shinjuku-ku	0.047
14	3/18 22:00 ~ 23:00	神奈川県	Kanagawa (Chigasa	0.049
15	3/18 22:00 ~ 23:00	新潟県	Niigata (Niigata)	0.046
16	3/18 22:00 ~ 23:00	富山県	Toyama (Imizu)	0.048
17	3/18 22:00 ~ 23:00	石川県	Ishikawa (Kanazawa	0.047
18	3/18 22:00 ~ 23:00	福井県	Fukui (Fukui)	0.046
19	3/18 22:00 ~ 23:00	山梨県	Yamanashi (Kofu)	0.044

20	3/18 22:00 ~ 23:00	長野県	Nagano (Nagano)	0.072
21	3/18 22:00 ~ 23:00	岐阜県	Gifu (Kakamigahara	0.061
22	3/18 22:00 ~ 23:00	静岡県	Shizuoka (Shizuoka	0.036
23	3/18 22:00 ~ 23:00	愛知県	Aichi (Nagoya)	0.039
24	3/18 22:00 ~ 23:00	三重県	Mie (Yokkaichi)	0.046
25	3/18 22:00 ~ 23:00	滋賀県	Shiga (Ohtsu)	0.035
26	3/18 22:00 ~ 23:00	京都府	Kyoto (Kyoto)	0.038
27	3/18 22:00 ~ 23:00	大阪府	Osaka (Osaka)	0.042
28	3/18 22:00 ~ 23:00	兵庫県	Hyogo (Kobe)	0.037
29	3/18 22:00 ~ 23:00	奈良県	Nara (Nara)	0.047
30	3/18 22:00 ~ 23:00	和歌山県	Wakayama (Wakaya	0.032
31	3/18 22:00 ~ 23:00	鳥取県	Tottori (Touhaku-g	0.063
32	3/18 22:00 ~ 23:00	島根県	Shimane (Matsue)	0.038
33	3/18 22:00 ~ 23:00	岡山県	Okayama (Okayama	0.048
34	3/18 22:00 ~ 23:00	広島県	Hiroshima (Hiroshin	0.047
35	3/18 22:00 ~ 23:00	山口県	Yamaguchi (Yamagı	0.093
36	3/18 22:00 ~ 23:00	徳島県	Tokushima (Tokush	0.038
37	3/18 22:00 ~ 23:00	香川県	Kagawa (Takamatsı	0.053
38	3/18 22:00 ~ 23:00	愛媛県	Ehime (Matsuyama	0.049
39	3/18 22:00 ~ 23:00	高知県	Kochi (Kochi)	0.025
40	3/18 22:00 ~ 23:00	福岡県	Fukuoka (Dazaifu)	0.037
41	3/18 22:00 ~ 23:00	佐賀県	Saga (Saga)	0.04
42	3/18 22:00 ~ 23:00	長崎県	Nagasaki (Ohmura)	0.029
43	3/18 22:00 ~ 23:00	熊本県	Kumamoto (Uto)	0.028
44	3/18 22:00 ~ 23:00	大分県	Oita (Oita)	0.051
45	3/18 22:00 ~ 23:00	宮崎県	Miyazaki (Miyazaki)	0.027
46	3/18 22:00 ~ 23:00	鹿児島県	Kagoshima (Kagosh	0.034
47	3/18 22:00 ~ 23:00	沖縄県	Okinawa (Uruma)	0.021
1	3/18 23:00 ~ 24:00	北海道	Hokkaido (Sapporo	0.028
2	3/18 23:00 ~ 24:00	青森県	Aomori (Aomori)	0.019
3	3/18 23:00 ~ 24:00	岩手県	Iwate (Morioka)	0.028
4	3/18 23:00 ~ 24:00	宮城県	Miyagi (Sendai)	
5	3/18 23:00 ~ 24:00	秋田県	Akita (Akita)	0.034
6	3/18 23:00 ~ 24:00	山形県	Yamagata (Yamaga	0.04
7	3/18 23:00 ~ 24:00	福島県	Fukushima (Futaba-gun)	
8	3/18 23:00 ~ 24:00	茨城県	Ibaraki (Mito)	0.183
9	3/18 23:00 ~ 24:00	栃木県	Tochigi (Itsunomiya	0.163
10	3/18 23:00 ~ 24:00	群馬県	Gunma (Maebashi)	0.083
11	3/18 23:00 ~ 24:00	埼玉県	Saitama (Saitama)	0.058
12	3/18 23:00 ~ 24:00	千葉県	Chiba (Ichihara)	0.034
13	3/18 23:00 ~ 24:00	東京都	Tokyo (Shinjuku-kı	0.047
14	3/18 23:00 ~ 24:00	神奈川県	Kanagawa (Chigasa	0.049
15	3/18 23:00 ~ 24:00	新潟県	Niigata (Niigata)	0.046
16	3/18 23:00 ~ 24:00	富山県	Toyama (Imizu)	0.048
17	3/18 23:00 ~ 24:00	石川県	Ishikawa (Kanazawa	0.047
18	3/18 23:00 ~ 24:00	福井県	Fukui (Fukui)	0.046
19	3/18 23:00 ~ 24:00	山梨県	Yamanashi (Kofu)	0.044
20	3/18 23:00 ~ 24:00	長野県	Nagano (Nagano)	0.072
21	3/18 23:00 ~ 24:00	岐阜県	Gifu (Kakamigahara	0.061
22	3/18 23:00 ~ 24:00	静岡県	Shizuoka (Shizuoka	0.037
23	3/18 23:00 ~ 24:00	愛知県	Aichi (Nagoya)	0.039
24	3/18 23:00 ~ 24:00	三重県	Mie (Yokkaichi)	0.046
25	3/18 23:00 ~ 24:00	滋賀県	Shiga (Ohtsu)	0.034
26	3/18 23:00 ~ 24:00	京都府	Kyoto (Kyoto)	0.039
27	3/18 23:00 ~ 24:00	大阪府	Osaka (Osaka)	0.042
28	3/18 23:00 ~ 24:00	兵庫県	Hyogo (Kobe)	0.037
29	3/18 23:00 ~ 24:00	奈良県	Nara (Nara)	0.048

30	3/18 23:00 ~ 24:00	和歌山県	Wakayama (Wakaya	0.032
31	3/18 23:00 ~ 24:00	鳥取県	Tottori (Touhaku-g	0.063
32	3/18 23:00 ~ 24:00	島根県	Shimane (Matsue)	0.038
33	3/18 23:00 ~ 24:00	岡山県	Okayama (Okayama	0.049
34	3/18 23:00 ~ 24:00	広島県	Hiroshima (Hiroshin	0.047
35	3/18 23:00 ~ 24:00	山口県	Yamaguchi (Yamagı	0.094
36	3/18 23:00 ~ 24:00	徳島県	Tokushima (Tokush	0.038
37	3/18 23:00 ~ 24:00	香川県	Kagawa (Takamatsı	0.053
38	3/18 23:00 ~ 24:00	愛媛県	Ehime (Matsuyama	0.048
39	3/18 23:00 ~ 24:00	高知県	Kochi (Kochi)	0.026
40	3/18 23:00 ~ 24:00	福岡県	Fukuoka (Dazaifu)	0.037
41	3/18 23:00 ~ 24:00	佐賀県	Saga (Saga)	0.04
42	3/18 23:00 ~ 24:00	長崎県	Nagasaki (Ohmura)	0.029
43	3/18 23:00 ~ 24:00	熊本県	Kumamoto (Uto)	0.028
44	3/18 23:00 ~ 24:00	大分県	Oita (Oita)	0.05
45	3/18 23:00 ~ 24:00	宮崎県	Miyazaki (Miyazaki)	0.027
46	3/18 23:00 ~ 24:00	鹿児島県	Kagoshima (Kagosh	0.035
47	3/18 23:00 ~ 24:00	沖縄県	Okinawa (Uruma)	0.021
1	3/19 00:00 ~ 01:00	北海道	Hokkaido (Sapporo	0.027
2	3/19 00:00 ~ 01:00	青森県	Aomori (Aomori)	0.019
3	3/19 00:00 ~ 01:00	岩手県	Iwate (Morioka)	0.028
4	3/19 00:00 ~ 01:00	宮城県	Miyagi (Sendai)	
5	3/19 00:00 ~ 01:00	秋田県	Akita (Akita)	0.034
6	3/19 00:00 ~ 01:00	山形県	Yamagata (Yamaga	0.04
7	3/19 00:00 ~ 01:00	福島県	Fukushima (Futaba-gun)	
8	3/19 00:00 ~ 01:00	茨城県	Ibaraki (Mito)	0.183
9	3/19 00:00 ~ 01:00	栃木県	Tochigi (Itsunomiya	0.162
10	3/19 00:00 ~ 01:00	群馬県	Gunma (Maebashi)	0.084
11	3/19 00:00 ~ 01:00	埼玉県	Saitama (Saitama)	0.058
12	3/19 00:00 ~ 01:00	千葉県	Chiba (Ichihara)	0.034
13	3/19 00:00 ~ 01:00	東京都	Tokyo (Shinjuku-kι	0.047
14	3/19 00:00 ~ 01:00	神奈川県	Kanagawa (Chigasa	0.049
15	3/19 00:00 ~ 01:00	新潟県	Niigata (Niigata)	0.046
16	3/19 00:00 ~ 01:00	富山県	Toyama (Imizu)	0.048
17	3/19 00:00 ~ 01:00	石川県	Ishikawa (Kanazawa	0.047
18	3/19 00:00 ~ 01:00	福井県	Fukui (Fukui)	0.045
19	3/19 00:00 ~ 01:00	山梨県	Yamanashi (Kofu)	0.044
20	3/19 00:00 ~ 01:00	長野県	Nagano (Nagano)	0.072
21	3/19 00:00 ~ 01:00	岐阜県	Gifu (Kakamigahara	0.061
22	3/19 00:00 ~ 01:00	静岡県	Shizuoka (Shizuoka	0.037
23	3/19 00:00 ~ 01:00	愛知県	Aichi (Nagoya)	0.039
24	3/19 00:00 ~ 01:00	三重県	Mie (Yokkaichi)	0.046
25	3/19 00:00 ~ 01:00	滋賀県	Shiga (Ohtsu)	0.035
26	3/19 00:00 ~ 01:00	京都府	Kyoto (Kyoto)	0.039
27	3/19 00:00 ~ 01:00	大阪府	Osaka (Osaka)	0.042
28	3/19 00:00 ~ 01:00	兵庫県	Hyogo (Kobe)	0.037
29	3/19 00:00 ~ 01:00	奈良県	Nara (Nara)	0.048
30	3/19 00:00 ~ 01:00	和歌山県	Wakayama (Wakaya	0.033
31	3/19 00:00 ~ 01:00	鳥取県	Tottori (Touhaku-g	0.063
32	3/19 00:00 ~ 01:00	島根県	Shimane (Matsue)	0.038
33	3/19 00:00 ~ 01:00	岡山県	Okayama (Okayama	0.049
34	3/19 00:00 ~ 01:00	広島県	Hiroshima (Hiroshin	0.047
35	3/19 00:00 ~ 01:00	山口県	Yamaguchi (Yamagı	0.094
36	3/19 00:00 ~ 01:00	徳島県	Tokushima (Tokush	0.038
37	3/19 00:00 ~ 01:00	香川県	Kagawa (Takamatsı	0.053
38	3/19 00:00 ~ 01:00	愛媛県	Ehime (Matsuyama	0.048
39	3/19 00:00 ~ 01:00	高知県	Kochi (Kochi)	0.026

40	3/19 00:00 ~ 01:00	福岡県	Fukuoka (Dazaifu)	0.037
41	3/19 00:00 ~ 01:00	佐賀県	Saga (Saga)	0.041
42	3/19 00:00 ~ 01:00	長崎県	Nagasaki (Ohmura)	0.029
43	3/19 00:00 ~ 01:00	熊本県	Kumamoto (Uto)	0.027
44	3/19 00:00 ~ 01:00	大分県	Oita (Oita)	0.051
45	3/19 00:00 ~ 01:00	宮崎県	Miyazaki (Miyazaki)	0.027
46	3/19 00:00 ~ 01:00	鹿児島県	Kagoshima (Kagosh	0.034
47	3/19 00:00 ~ 01:00	沖縄県	Okinawa (Uruma)	0.021
1	3/19 01:00 ~ 02:00	北海道	Hokkaido (Sapporo)	0.028
2	3/19 01:00 ~ 02:00	青森県	Aomori (Aomori)	0.02
3	3/19 01:00 ~ 02:00	岩手県	Iwate (Morioka)	0.028
4	3/19 01:00 ~ 02:00	宮城県	Miyagi (Sendai)	
5	3/19 01:00 ~ 02:00	秋田県	Akita (Akita)	0.034
6	3/19 01:00 ~ 02:00	山形県	Yamagata (Yamaga	0.04
7	3/19 01:00 ~ 02:00	福島県	Fukushima (Futaba-gun)	
8	3/19 01:00 ~ 02:00	茨城県	Ibaraki (Mito)	0.182
9	3/19 01:00 ~ 02:00	栃木県	Tochigi (Itsunomiya	0.161
10	3/19 01:00 ~ 02:00	群馬県	Gunma (Maebashi)	0.084
11	3/19 01:00 ~ 02:00	埼玉県	Saitama (Saitama)	0.058
12	3/19 01:00 ~ 02:00	千葉県	Chiba (Ichihara)	0.034
13	3/19 01:00 ~ 02:00	東京都	Tokyo (Shinjuku-ku	0.047
14	3/19 01:00 ~ 02:00	神奈川県	Kanagawa (Chigasa	0.049
15	3/19 01:00 ~ 02:00	新潟県	Niigata (Niigata)	0.047
16	3/19 01:00 ~ 02:00	富山県	Toyama (Imizu)	0.049
17	3/19 01:00 ~ 02:00	石川県	Ishikawa (Kanazawa	0.048
18	3/19 01:00 ~ 02:00	福井県	Fukui (Fukui)	0.046
19	3/19 01:00 ~ 02:00	山梨県	Yamanashi (Kofu)	0.044
20	3/19 01:00 ~ 02:00	長野県	Nagano (Nagano)	0.072
21	3/19 01:00 ~ 02:00	岐阜県	Gifu (Kakamigahara	0.061
22	3/19 01:00 ~ 02:00	静岡県	Shizuoka (Shizuoka	0.037
23	3/19 01:00 ~ 02:00	愛知県	Aichi (Nagoya)	0.039
24	3/19 01:00 ~ 02:00	三重県	Mie (Yokkaichi)	0.047
25	3/19 01:00 ~ 02:00	滋賀県	Shiga (Ohtsu)	0.035
26	3/19 01:00 ~ 02:00	京都府	Kyoto (Kyoto)	0.039
27	3/19 01:00 ~ 02:00	大阪府	Osaka (Osaka)	0.042
28	3/19 01:00 ~ 02:00	兵庫県	Hyogo (Kobe)	0.037
29	3/19 01:00 ~ 02:00	奈良県	Nara (Nara)	0.048
30	3/19 01:00 ~ 02:00	和歌山県	Wakayama (Wakaya	0.033
31	3/19 01:00 ~ 02:00	鳥取県	Tottori (Touhaku-g	0.062
32	3/19 01:00 ~ 02:00	島根県	Shimane (Matsue)	0.038
33	3/19 01:00 ~ 02:00	岡山県	Okayama (Okayama	0.049
34	3/19 01:00 ~ 02:00	広島県	Hiroshima (Hiroshin	0.048
35	3/19 01:00 ~ 02:00	山口県	Yamaguchi (Yamagu	0.095
36	3/19 01:00 ~ 02:00	徳島県	Tokushima (Tokush	0.038
37	3/19 01:00 ~ 02:00	香川県	Kagawa (Takamatsu	0.053
38	3/19 01:00 ~ 02:00	愛媛県	Ehime (Matsuyama)	0.048
39	3/19 01:00 ~ 02:00	高知県	Kochi (Kochi)	0.026
40	3/19 01:00 ~ 02:00	福岡県	Fukuoka (Dazaifu)	0.037
41	3/19 01:00 ~ 02:00	佐賀県	Saga (Saga)	0.041
42	3/19 01:00 ~ 02:00	長崎県	Nagasaki (Ohmura)	0.029
43	3/19 01:00 ~ 02:00	熊本県	Kumamoto (Uto)	0.028
44	3/19 01:00 ~ 02:00	大分県	Oita (Oita)	0.05
45	3/19 01:00 ~ 02:00	宮崎県	Miyazaki (Miyazaki)	0.027
46	3/19 01:00 ~ 02:00	鹿児島県	Kagoshima (Kagosh	0.034
47	3/19 01:00 ~ 02:00	沖縄県	Okinawa (Uruma)	0.02
1	3/19 02:00 ~ 03:00	北海道	Hokkaido (Sapporo)	0.027
2	3/19 02:00 ~ 03:00	青森県	Aomori (Aomori)	0.019

3	3/19 02:00 ~ 03:00	岩手県	Iwate (Morioka)	0.028
4	3/19 02:00 ~ 03:00	宮城県	Miyagi (Sendai)	
5	3/19 02:00 ~ 03:00	秋田県	Akita (Akita)	0.034
6	3/19 02:00 ~ 03:00	山形県	Yamagata (Yamaga	0.04
7	3/19 02:00 ~ 03:00	福島県	Fukushima (Futaba-gun)	
8	3/19 02:00 ~ 03:00	茨城県	Ibaraki (Mito)	0.182
9	3/19 02:00 ~ 03:00	栃木県	Tochigi (Itsunomiya	0.161
10	3/19 02:00 ~ 03:00	群馬県	Gunma (Maebashi)	0.083
11	3/19 02:00 ~ 03:00	埼玉県	Saitama (Saitama)	0.057
12	3/19 02:00 ~ 03:00	千葉県	Chiba (Ichihara)	0.033
13	3/19 02:00 ~ 03:00	東京都	Tokyo (Shinjuku-ku	0.047
14	3/19 02:00 ~ 03:00	神奈川県	Kanagawa (Chigasa	0.049
15	3/19 02:00 ~ 03:00	新潟県	Niigata (Niigata)	0.047
16	3/19 02:00 ~ 03:00	富山県	Toyama (Imizu)	0.049
17	3/19 02:00 ~ 03:00	石川県	Ishikawa (Kanazawa	0.048
18	3/19 02:00 ~ 03:00	福井県	Fukui (Fukui)	0.046
19	3/19 02:00 ~ 03:00	山梨県	Yamanashi (Kofu)	0.044
20	3/19 02:00 ~ 03:00	長野県	Nagano (Nagano)	0.072
21	3/19 02:00 ~ 03:00	岐阜県	Gifu (Kakamigahara	0.061
22	3/19 02:00 ~ 03:00	静岡県	Shizuoka (Shizuoka	0.037
23	3/19 02:00 ~ 03:00	愛知県	Aichi (Nagoya)	0.04
24	3/19 02:00 ~ 03:00	三重県	Mie (Yokkaichi)	0.047
25	3/19 02:00 ~ 03:00	滋賀県	Shiga (Ohtsu)	0.036
26	3/19 02:00 ~ 03:00	京都府	Kyoto (Kyoto)	0.039
27	3/19 02:00 ~ 03:00	大阪府	Osaka (Osaka)	0.042
28	3/19 02:00 ~ 03:00	兵庫県	Hyogo (Kobe)	0.037
29	3/19 02:00 ~ 03:00	奈良県	Nara (Nara)	0.048
30	3/19 02:00 ~ 03:00	和歌山県	Wakayama (Wakaya	0.033
31	3/19 02:00 ~ 03:00	鳥取県	Tottori (Touhaku-g	0.063
32	3/19 02:00 ~ 03:00	島根県	Shimane (Matsue)	0.038
33	3/19 02:00 ~ 03:00	岡山県	Okayama (Okayama	0.049
34	3/19 02:00 ~ 03:00	広島県	Hiroshima (Hiroshin	0.049
35	3/19 02:00 ~ 03:00	山口県	Yamaguchi (Yamagı	0.095
36	3/19 02:00 ~ 03:00	徳島県	Tokushima (Tokush	0.038
37	3/19 02:00 ~ 03:00	香川県	Kagawa (Takamatsı	0.053
38	3/19 02:00 ~ 03:00	愛媛県	Ehime (Matsuyama	0.048
39	3/19 02:00 ~ 03:00	高知県	Kochi (Kochi)	0.027
40	3/19 02:00 ~ 03:00	福岡県	Fukuoka (Dazaifu)	0.037
41	3/19 02:00 ~ 03:00	佐賀県	Saga (Saga)	0.041
42	3/19 02:00 ~ 03:00	長崎県	Nagasaki (Ohmura)	0.029
43	3/19 02:00 ~ 03:00	熊本県	Kumamoto (Uto)	0.028
44	3/19 02:00 ~ 03:00	大分県	Oita (Oita)	0.051
45	3/19 02:00 ~ 03:00	宮崎県	Miyazaki (Miyazaki)	0.027
46	3/19 02:00 ~ 03:00	鹿児島県	Kagoshima (Kagosh	0.035
47	3/19 02:00 ~ 03:00	沖縄県	Okinawa (Uruma)	0.021
1	3/19 03:00 ~ 04:00	北海道	Hokkaido (Sapporo	0.027
2	3/19 03:00 ~ 04:00	青森県	Aomori (Aomori)	0.02
3	3/19 03:00 ~ 04:00	岩手県	Iwate (Morioka)	0.028
4	3/19 03:00 ~ 04:00	宮城県	Miyagi (Sendai)	
5	3/19 03:00 ~ 04:00	秋田県	Akita (Akita)	0.034
6	3/19 03:00 ~ 04:00	山形県	Yamagata (Yamaga	0.04
7	3/19 03:00 ~ 04:00	福島県	Fukushima (Futaba-gun)	
8	3/19 03:00 ~ 04:00	茨城県	Ibaraki (Mito)	0.181
9	3/19 03:00 ~ 04:00	栃木県	Tochigi (Itsunomiya	0.16
10	3/19 03:00 ~ 04:00	群馬県	Gunma (Maebashi)	0.082
11	3/19 03:00 ~ 04:00	埼玉県	Saitama (Saitama)	0.058
12	3/19 03:00 ~ 04:00	千葉県	Chiba (Ichihara)	0.033

13	3/19 03:00 ~ 04:00	東京都	Tokyo (Shinjuku-ku	0.048
14	3/19 03:00 ~ 04:00	神奈川県	Kanagawa (Chigasa	0.049
15	3/19 03:00 ~ 04:00	新潟県	Niigata (Niigata)	0.047
16	3/19 03:00 ~ 04:00	富山県	Toyama (Imizu)	0.049
17	3/19 03:00 ~ 04:00	石川県	Ishikawa (Kanazawa	0.047
18	3/19 03:00 ~ 04:00	福井県	Fukui (Fukui)	0.046
19	3/19 03:00 ~ 04:00	山梨県	Yamanashi (Kofu)	0.044
20	3/19 03:00 ~ 04:00	長野県	Nagano (Nagano)	0.072
21	3/19 03:00 ~ 04:00	岐阜県	Gifu (Kakamigahara	0.062
22	3/19 03:00 ~ 04:00	静岡県	Shizuoka (Shizuoka	0.038
23	3/19 03:00 ~ 04:00	愛知県	Aichi (Nagoya)	0.041
24	3/19 03:00 ~ 04:00	三重県	Mie (Yokkaichi)	0.046
25	3/19 03:00 ~ 04:00	滋賀県	Shiga (Ohtsu)	0.035
26	3/19 03:00 ~ 04:00	京都府	Kyoto (Kyoto)	0.039
27	3/19 03:00 ~ 04:00	大阪府	Osaka (Osaka)	0.042
28	3/19 03:00 ~ 04:00	兵庫県	Hyogo (Kobe)	0.037
29	3/19 03:00 ~ 04:00	奈良県	Nara (Nara)	0.048
30	3/19 03:00 ~ 04:00	和歌山県	Wakayama (Wakaya	0.033
31	3/19 03:00 ~ 04:00	鳥取県	Tottori (Touhaku-g	0.063
32	3/19 03:00 ~ 04:00	島根県	Shimane (Matsue)	0.037
33	3/19 03:00 ~ 04:00	岡山県	Okayama (Okayama	0.05
34	3/19 03:00 ~ 04:00	広島県	Hiroshima (Hiroshin	0.049
35	3/19 03:00 ~ 04:00	山口県	Yamaguchi (Yamagu	0.096
36	3/19 03:00 ~ 04:00	徳島県	Tokushima (Tokush	0.038
37	3/19 03:00 ~ 04:00	香川県	Kagawa (Takamatsu	0.054
38	3/19 03:00 ~ 04:00	愛媛県	Ehime (Matsuyama)	0.048
39	3/19 03:00 ~ 04:00	高知県	Kochi (Kochi)	0.027
40	3/19 03:00 ~ 04:00	福岡県	Fukuoka (Dazaifu)	0.036
41	3/19 03:00 ~ 04:00	佐賀県	Saga (Saga)	0.041
42	3/19 03:00 ~ 04:00	長崎県	Nagasaki (Ohmura)	0.029
43	3/19 03:00 ~ 04:00	熊本県	Kumamoto (Uto)	0.028
44	3/19 03:00 ~ 04:00	大分県	Oita (Oita)	0.05
45	3/19 03:00 ~ 04:00	宮崎県	Miyazaki (Miyazaki)	0.027
46	3/19 03:00 ~ 04:00	鹿児島県	Kagoshima (Kagosh	0.035
47	3/19 03:00 ~ 04:00	沖縄県	Okinawa (Uruma)	0.021
1	3/19 04:00 ~ 05:00	北海道	Hokkaido (Sapporo)	0.028
2	3/19 04:00 ~ 05:00	青森県	Aomori (Aomori)	0.019
3	3/19 04:00 ~ 05:00	岩手県	Iwate (Morioka)	0.028
4	3/19 04:00 ~ 05:00	宮城県	Miyagi (Sendai)	
5	3/19 04:00 ~ 05:00	秋田県	Akita (Akita)	0.034
6	3/19 04:00 ~ 05:00	山形県	Yamagata (Yamaga	0.04
7	3/19 04:00 ~ 05:00	福島県	Fukushima (Futaba-gun)	
8	3/19 04:00 ~ 05:00	茨城県	Ibaraki (Mito)	0.18
9	3/19 04:00 ~ 05:00	栃木県	Tochigi (Itsunomiya	0.159
10	3/19 04:00 ~ 05:00	群馬県	Gunma (Maebashi)	0.083
11	3/19 04:00 ~ 05:00	埼玉県	Saitama (Saitama)	0.058
12	3/19 04:00 ~ 05:00	千葉県	Chiba (Ichihara)	0.033
13	3/19 04:00 ~ 05:00	東京都	Tokyo (Shinjuku-ku	0.047
14	3/19 04:00 ~ 05:00	神奈川県	Kanagawa (Chigasa	0.049
15	3/19 04:00 ~ 05:00	新潟県	Niigata (Niigata)	0.047
16	3/19 04:00 ~ 05:00	富山県	Toyama (Imizu)	0.048
17	3/19 04:00 ~ 05:00	石川県	Ishikawa (Kanazawa	0.048
18	3/19 04:00 ~ 05:00	福井県	Fukui (Fukui)	0.046
19	3/19 04:00 ~ 05:00	山梨県	Yamanashi (Kofu)	0.045
20	3/19 04:00 ~ 05:00	長野県	Nagano (Nagano)	0.071
21	3/19 04:00 ~ 05:00	岐阜県	Gifu (Kakamigahara	0.062
22	3/19 04:00 ~ 05:00	静岡県	Shizuoka (Shizuoka	0.037

23	3/19 04:00 ~ 05:00	愛知県	Aichi (Nagoya)	0.041
24	3/19 04:00 ~ 05:00	三重県	Mie (Yokkaichi)	0.046
25	3/19 04:00 ~ 05:00	滋賀県	Shiga (Ohtsu)	0.037
26	3/19 04:00 ~ 05:00	京都府	Kyoto (Kyoto)	0.039
27	3/19 04:00 ~ 05:00	大阪府	Osaka (Osaka)	0.043
28	3/19 04:00 ~ 05:00	兵庫県	Hyogo (Kobe)	0.037
29	3/19 04:00 ~ 05:00	奈良県	Nara (Nara)	0.048
30	3/19 04:00 ~ 05:00	和歌山県	Wakayama (Wakaya	0.033
31	3/19 04:00 ~ 05:00	鳥取県	Tottori (Touhaku-g	0.063
32	3/19 04:00 ~ 05:00	島根県	Shimane (Matsue)	0.037
33	3/19 04:00 ~ 05:00	岡山県	Okayama (Okayama	0.05
34	3/19 04:00 ~ 05:00	広島県	Hiroshima (Hiroshin	0.05
35	3/19 04:00 ~ 05:00	山口県	Yamaguchi (Yamagı	0.095
36	3/19 04:00 ~ 05:00	徳島県	Tokushima (Tokush	0.038
37	3/19 04:00 ~ 05:00	香川県	Kagawa (Takamatsı	0.054
38	3/19 04:00 ~ 05:00	愛媛県	Ehime (Matsuyama	0.048
39	3/19 04:00 ~ 05:00	高知県	Kochi (Kochi)	0.027
40	3/19 04:00 ~ 05:00	福岡県	Fukuoka (Dazaifu)	0.036
41	3/19 04:00 ~ 05:00	佐賀県	Saga (Saga)	0.041
42	3/19 04:00 ~ 05:00	長崎県	Nagasaki (Ohmura)	0.029
43	3/19 04:00 ~ 05:00	熊本県	Kumamoto (Uto)	0.028
44	3/19 04:00 ~ 05:00	大分県	Oita (Oita)	0.05
45	3/19 04:00 ~ 05:00	宮崎県	Miyazaki (Miyazaki)	0.027
46	3/19 04:00 ~ 05:00	鹿児島県	Kagoshima (Kagosh	0.036
47	3/19 04:00 ~ 05:00	沖縄県	Okinawa (Uruma)	0.021
1	3/19 05:00 ~ 06:00	北海道	Hokkaido (Sapporo)	0.028
2	3/19 05:00 ~ 06:00	青森県	Aomori (Aomori)	0.02
3	3/19 05:00 ~ 06:00	岩手県	Iwate (Morioka)	0.028
4	3/19 05:00 ~ 06:00	宮城県	Miyagi (Sendai)	
5	3/19 05:00 ~ 06:00	秋田県	Akita (Akita)	0.034
6	3/19 05:00 ~ 06:00	山形県	Yamagata (Yamaga	0.04
7	3/19 05:00 ~ 06:00	福島県	Fukushima (Futaba-gun)	
8	3/19 05:00 ~ 06:00	茨城県	Ibaraki (Mito)	0.18
9	3/19 05:00 ~ 06:00	栃木県	Tochigi (Itsunomiya	0.159
10	3/19 05:00 ~ 06:00	群馬県	Gunma (Maebashi)	0.082
11	3/19 05:00 ~ 06:00	埼玉県	Saitama (Saitama)	0.058
12	3/19 05:00 ~ 06:00	千葉県	Chiba (Ichihara)	0.033
13	3/19 05:00 ~ 06:00	東京都	Tokyo (Shinjuku-kı	0.047
14	3/19 05:00 ~ 06:00	神奈川県	Kanagawa (Chigasa	0.049
15	3/19 05:00 ~ 06:00	新潟県	Niigata (Niigata)	0.047
16	3/19 05:00 ~ 06:00	富山県	Toyama (Imizu)	0.048
17	3/19 05:00 ~ 06:00	石川県	Ishikawa (Kanazawa	0.047
18	3/19 05:00 ~ 06:00	福井県	Fukui (Fukui)	0.046
19	3/19 05:00 ~ 06:00	山梨県	Yamanashi (Kofu)	0.045
20	3/19 05:00 ~ 06:00	長野県	Nagano (Nagano)	0.071
21	3/19 05:00 ~ 06:00	岐阜県	Gifu (Kakamigahara	0.062
22	3/19 05:00 ~ 06:00	静岡県	Shizuoka (Shizuoka	0.038
23	3/19 05:00 ~ 06:00	愛知県	Aichi (Nagoya)	0.041
24	3/19 05:00 ~ 06:00	三重県	Mie (Yokkaichi)	0.046
25	3/19 05:00 ~ 06:00	滋賀県	Shiga (Ohtsu)	0.038
26	3/19 05:00 ~ 06:00	京都府	Kyoto (Kyoto)	0.039
27	3/19 05:00 ~ 06:00	大阪府	Osaka (Osaka)	0.043
28	3/19 05:00 ~ 06:00	兵庫県	Hyogo (Kobe)	0.037
29	3/19 05:00 ~ 06:00	奈良県	Nara (Nara)	0.048
30	3/19 05:00 ~ 06:00	和歌山県	Wakayama (Wakaya	0.032
31	3/19 05:00 ~ 06:00	鳥取県	Tottori (Touhaku-g	0.063
32	3/19 05:00 ~ 06:00	島根県	Shimane (Matsue)	0.037

33	3/19 05:00 ~ 06:00	岡山県	Okayama (Okayam:	0.05
34	3/19 05:00 ~ 06:00	広島県	Hiroshima (Hiroshin	0.05
35	3/19 05:00 ~ 06:00	山口県	Yamaguchi (Yamagı	0.096
36	3/19 05:00 ~ 06:00	徳島県	Tokushima (Tokush	0.039
37	3/19 05:00 ~ 06:00	香川県	Kagawa (Takamatsı	0.054
38	3/19 05:00 ~ 06:00	愛媛県	Ehime (Matsuyama.	0.048
39	3/19 05:00 ~ 06:00	高知県	Kochi (Kochi)	0.027
40	3/19 05:00 ~ 06:00	福岡県	Fukuoka (Dazaifu)	0.037
41	3/19 05:00 ~ 06:00	佐賀県	Saga (Saga)	0.041
42	3/19 05:00 ~ 06:00	長崎県	Nagasaki (Ohmura)	0.029
43	3/19 05:00 ~ 06:00	熊本県	Kumamoto (Uto)	0.027
44	3/19 05:00 ~ 06:00	大分県	Oita (Oita)	0.05
45	3/19 05:00 ~ 06:00	宮崎県	Miyazaki (Miyazaki)	0.027
46	3/19 05:00 ~ 06:00	鹿児島県	Kagoshima (Kagosh	0.035
47	3/19 05:00 ~ 06:00	沖縄県	Okinawa (Uruma)	0.021
1	3/19 06:00 ~ 07:00	北海道	Hokkaido (Sapporo.	0.027
2	3/19 06:00 ~ 07:00	青森県	Aomori (Aomori)	0.019
3	3/19 06:00 ~ 07:00	岩手県	Iwate (Morioka)	0.028
4	3/19 06:00 ~ 07:00	宮城県	Miyagi (Sendai)	
5	3/19 06:00 ~ 07:00	秋田県	Akita (Akita)	0.034
6	3/19 06:00 ~ 07:00	山形県	Yamagata (Yamaga	0.04
7	3/19 06:00 ~ 07:00	福島県	Fukushima (Futaba-gun)	
8	3/19 06:00 ~ 07:00	茨城県	Ibaraki (Mito)	0.18
9	3/19 06:00 ~ 07:00	栃木県	Tochigi (Itsunomiya	0.157
10	3/19 06:00 ~ 07:00	群馬県	Gunma (Maebashi)	0.083
11	3/19 06:00 ~ 07:00	埼玉県	Saitama (Saitama)	0.058
12	3/19 06:00 ~ 07:00	千葉県	Chiba (Ichihara)	0.033
13	3/19 06:00 ~ 07:00	東京都	Tokyo (Shinjuku-kı	0.047
14	3/19 06:00 ~ 07:00	神奈川県	Kanagawa (Chigasa	0.049
15	3/19 06:00 ~ 07:00	新潟県	Niigata (Niigata)	0.047
16	3/19 06:00 ~ 07:00	富山県	Toyama (Imizu)	0.048
17	3/19 06:00 ~ 07:00	石川県	Ishikawa (Kanazaw:	0.047
18	3/19 06:00 ~ 07:00	福井県	Fukui (Fukui)	0.046
19	3/19 06:00 ~ 07:00	山梨県	Yamanashi (Kofu)	0.045
20	3/19 06:00 ~ 07:00	長野県	Nagano (Nagano)	0.071
21	3/19 06:00 ~ 07:00	岐阜県	Gifu (Kakamigahara	0.063
22	3/19 06:00 ~ 07:00	静岡県	Shizuoka (Shizuoka	0.038
23	3/19 06:00 ~ 07:00	愛知県	Aichi (Nagoya)	0.042
24	3/19 06:00 ~ 07:00	三重県	Mie (Yokkaichi)	0.046
25	3/19 06:00 ~ 07:00	滋賀県	Shiga (Ohtsu)	0.038
26	3/19 06:00 ~ 07:00	京都府	Kyoto (Kyoto)	0.04
27	3/19 06:00 ~ 07:00	大阪府	Osaka (Osaka)	0.044
28	3/19 06:00 ~ 07:00	兵庫県	Hyogo (Kobe)	0.038
29	3/19 06:00 ~ 07:00	奈良県	Nara (Nara)	0.049
30	3/19 06:00 ~ 07:00	和歌山県	Wakayama (Wakaya	0.033
31	3/19 06:00 ~ 07:00	鳥取県	Tottori (Touhaku-g	0.063
32	3/19 06:00 ~ 07:00	島根県	Shimane (Matsue)	0.037
33	3/19 06:00 ~ 07:00	岡山県	Okayama (Okayam:	0.05
34	3/19 06:00 ~ 07:00	広島県	Hiroshima (Hiroshin	0.05
35	3/19 06:00 ~ 07:00	山口県	Yamaguchi (Yamagı	0.096
36	3/19 06:00 ~ 07:00	徳島県	Tokushima (Tokush	0.039
37	3/19 06:00 ~ 07:00	香川県	Kagawa (Takamatsı	0.054
38	3/19 06:00 ~ 07:00	愛媛県	Ehime (Matsuyama.	0.048
39	3/19 06:00 ~ 07:00	高知県	Kochi (Kochi)	0.027
40	3/19 06:00 ~ 07:00	福岡県	Fukuoka (Dazaifu)	0.037
41	3/19 06:00 ~ 07:00	佐賀県	Saga (Saga)	0.041
42	3/19 06:00 ~ 07:00	長崎県	Nagasaki (Ohmura)	0.029

43	3/19 06:00 ~ 07:00	熊本県	Kumamoto (Uto)	0.027
44	3/19 06:00 ~ 07:00	大分県	Oita (Oita)	0.05
45	3/19 06:00 ~ 07:00	宮崎県	Miyazaki (Miyazaki)	0.027
46	3/19 06:00 ~ 07:00	鹿児島県	Kagoshima (Kagosh	0.035
47	3/19 06:00 ~ 07:00	沖縄県	Okinawa (Uruma)	0.021
1	3/19 07:00 ~ 08:00	北海道	Hokkaido (Sapporo)	0.028
2	3/19 07:00 ~ 08:00	青森県	Aomori (Aomori)	0.02
3	3/19 07:00 ~ 08:00	岩手県	Iwate (Morioka)	0.028
4	3/19 07:00 ~ 08:00	宮城県	Miyagi (Sendai)	
5	3/19 07:00 ~ 08:00	秋田県	Akita (Akita)	0.034
6	3/19 07:00 ~ 08:00	山形県	Yamagata (Yamaga	0.04
7	3/19 07:00 ~ 08:00	福島県	Fukushima (Futaba-gun)	
8	3/19 07:00 ~ 08:00	茨城県	Ibaraki (Mito)	0.178
9	3/19 07:00 ~ 08:00	栃木県	Tochigi (Itsunomiya	0.156
10	3/19 07:00 ~ 08:00	群馬県	Gunma (Maebashi)	0.083
11	3/19 07:00 ~ 08:00	埼玉県	Saitama (Saitama)	0.057
12	3/19 07:00 ~ 08:00	千葉県	Chiba (Ichihara)	0.033
13	3/19 07:00 ~ 08:00	東京都	Tokyo (Shinjuku-ku	0.048
14	3/19 07:00 ~ 08:00	神奈川県	Kanagawa (Chigasa	0.049
15	3/19 07:00 ~ 08:00	新潟県	Niigata (Niigata)	0.047
16	3/19 07:00 ~ 08:00	富山県	Toyama (Imizu)	0.047
17	3/19 07:00 ~ 08:00	石川県	Ishikawa (Kanazawa	0.046
18	3/19 07:00 ~ 08:00	福井県	Fukui (Fukui)	0.046
19	3/19 07:00 ~ 08:00	山梨県	Yamanashi (Kofu)	0.045
20	3/19 07:00 ~ 08:00	長野県	Nagano (Nagano)	0.071
21	3/19 07:00 ~ 08:00	岐阜県	Gifu (Kakamigahara	0.063
22	3/19 07:00 ~ 08:00	静岡県	Shizuoka (Shizuoka	0.037
23	3/19 07:00 ~ 08:00	愛知県	Aichi (Nagoya)	0.042
24	3/19 07:00 ~ 08:00	三重県	Mie (Yokkaichi)	0.046
25	3/19 07:00 ~ 08:00	滋賀県	Shiga (Ohtsu)	0.037
26	3/19 07:00 ~ 08:00	京都府	Kyoto (Kyoto)	0.04
27	3/19 07:00 ~ 08:00	大阪府	Osaka (Osaka)	0.043
28	3/19 07:00 ~ 08:00	兵庫県	Hyogo (Kobe)	0.038
29	3/19 07:00 ~ 08:00	奈良県	Nara (Nara)	0.048
30	3/19 07:00 ~ 08:00	和歌山県	Wakayama (Wakaya	0.032
31	3/19 07:00 ~ 08:00	鳥取県	Tottori (Touhaku-g	0.063
32	3/19 07:00 ~ 08:00	島根県	Shimane (Matsue)	0.036
33	3/19 07:00 ~ 08:00	岡山県	Okayama (Okayama	0.05
34	3/19 07:00 ~ 08:00	広島県	Hiroshima (Hiroshin	0.05
35	3/19 07:00 ~ 08:00	山口県	Yamaguchi (Yamagu	0.096
36	3/19 07:00 ~ 08:00	徳島県	Tokushima (Tokush	0.039
37	3/19 07:00 ~ 08:00	香川県	Kagawa (Takamatsu	0.055
38	3/19 07:00 ~ 08:00	愛媛県	Ehime (Matsuyama)	0.048
39	3/19 07:00 ~ 08:00	高知県	Kochi (Kochi)	0.027
40	3/19 07:00 ~ 08:00	福岡県	Fukuoka (Dazaifu)	0.037
41	3/19 07:00 ~ 08:00	佐賀県	Saga (Saga)	0.041
42	3/19 07:00 ~ 08:00	長崎県	Nagasaki (Ohmura)	0.029
43	3/19 07:00 ~ 08:00	熊本県	Kumamoto (Uto)	0.028
44	3/19 07:00 ~ 08:00	大分県	Oita (Oita)	0.05
45	3/19 07:00 ~ 08:00	宮崎県	Miyazaki (Miyazaki)	0.027
46	3/19 07:00 ~ 08:00	鹿児島県	Kagoshima (Kagosh	0.035
47	3/19 07:00 ~ 08:00	沖縄県	Okinawa (Uruma)	0.021
1	3/19 08:00 ~ 09:00	北海道	Hokkaido (Sapporo)	0.027
2	3/19 08:00 ~ 09:00	青森県	Aomori (Aomori)	0.019
3	3/19 08:00 ~ 09:00	岩手県	Iwate (Morioka)	0.028
4	3/19 08:00 ~ 09:00	宮城県	Miyagi (Sendai)	
5	3/19 08:00 ~ 09:00	秋田県	Akita (Akita)	0.034

6	3/19 08:00 ~ 09:00	山形県	Yamagata (Yamaga	0.04
7	3/19 08:00 ~ 09:00	福島県	Fukushima (Futaba-gun)	
8	3/19 08:00 ~ 09:00	茨城県	Ibaraki (Mito)	0.177
9	3/19 08:00 ~ 09:00	栃木県	Tochigi (Itsunomiya	0.155
10	3/19 08:00 ~ 09:00	群馬県	Gunma (Maebashi)	0.081
11	3/19 08:00 ~ 09:00	埼玉県	Saitama (Saitama)	0.057
12	3/19 08:00 ~ 09:00	千葉県	Chiba (Ichihara)	0.033
13	3/19 08:00 ~ 09:00	東京都	Tokyo (Shinjuku-ku	0.047
14	3/19 08:00 ~ 09:00	神奈川県	Kanagawa (Chigasa	0.049
15	3/19 08:00 ~ 09:00	新潟県	Niigata (Niigata)	0.047
16	3/19 08:00 ~ 09:00	富山県	Toyama (Imizu)	0.047
17	3/19 08:00 ~ 09:00	石川県	Ishikawa (Kanazawa	0.047
18	3/19 08:00 ~ 09:00	福井県	Fukui (Fukui)	0.045
19	3/19 08:00 ~ 09:00	山梨県	Yamanashi (Kofu)	0.045
20	3/19 08:00 ~ 09:00	長野県	Nagano (Nagano)	0.07
21	3/19 08:00 ~ 09:00	岐阜県	Gifu (Kakamigahara	0.062
22	3/19 08:00 ~ 09:00	静岡県	Shizuoka (Shizuoka	0.037
23	3/19 08:00 ~ 09:00	愛知県	Aichi (Nagoya)	0.042
24	3/19 08:00 ~ 09:00	三重県	Mie (Yokkaichi)	0.046
25	3/19 08:00 ~ 09:00	滋賀県	Shiga (Ohtsu)	0.036
26	3/19 08:00 ~ 09:00	京都府	Kyoto (Kyoto)	0.04
27	3/19 08:00 ~ 09:00	大阪府	Osaka (Osaka)	0.044
28	3/19 08:00 ~ 09:00	兵庫県	Hyogo (Kobe)	0.038
29	3/19 08:00 ~ 09:00	奈良県	Nara (Nara)	0.048
30	3/19 08:00 ~ 09:00	和歌山県	Wakayama (Wakaya	0.032
31	3/19 08:00 ~ 09:00	鳥取県	Tottori (Touhaku-g	0.063
32	3/19 08:00 ~ 09:00	島根県	Shimane (Matsue)	0.036
33	3/19 08:00 ~ 09:00	岡山県	Okayama (Okayama	0.051
34	3/19 08:00 ~ 09:00	広島県	Hiroshima (Hiroshin	0.05
35	3/19 08:00 ~ 09:00	山口県	Yamaguchi (Yamagu	0.096
36	3/19 08:00 ~ 09:00	徳島県	Tokushima (Tokush	0.039
37	3/19 08:00 ~ 09:00	香川県	Kagawa (Takamatsu	0.053
38	3/19 08:00 ~ 09:00	愛媛県	Ehime (Matsuyama)	0.048
39	3/19 08:00 ~ 09:00	高知県	Kochi (Kochi)	0.027
40	3/19 08:00 ~ 09:00	福岡県	Fukuoka (Dazaifu)	0.037
41	3/19 08:00 ~ 09:00	佐賀県	Saga (Saga)	0.041
42	3/19 08:00 ~ 09:00	長崎県	Nagasaki (Ohmura)	0.03
43	3/19 08:00 ~ 09:00	熊本県	Kumamoto (Uto)	0.027
44	3/19 08:00 ~ 09:00	大分県	Oita (Oita)	0.051
45	3/19 08:00 ~ 09:00	宮崎県	Miyazaki (Miyazaki)	0.027
46	3/19 08:00 ~ 09:00	鹿児島県	Kagoshima (Kagosh	0.035
47	3/19 08:00 ~ 09:00	沖縄県	Okinawa (Uruma)	0.021
1	3/19 09:00 ~ 10:00	北海道	Hokkaido (Sapporo)	0.027
2	3/19 09:00 ~ 10:00	青森県	Aomori (Aomori)	0.02
3	3/19 09:00 ~ 10:00	岩手県	Iwate (Morioka)	0.027
4	3/19 09:00 ~ 10:00	宮城県	Miyagi (Sendai)	
5	3/19 09:00 ~ 10:00	秋田県	Akita (Akita)	0.034
6	3/19 09:00 ~ 10:00	山形県	Yamagata (Yamaga	0.04
7	3/19 09:00 ~ 10:00	福島県	Fukushima (Futaba-gun)	
8	3/19 09:00 ~ 10:00	茨城県	Ibaraki (Mito)	0.176
9	3/19 09:00 ~ 10:00	栃木県	Tochigi (Itsunomiya	0.154
10	3/19 09:00 ~ 10:00	群馬県	Gunma (Maebashi)	0.08
11	3/19 09:00 ~ 10:00	埼玉県	Saitama (Saitama)	0.057
12	3/19 09:00 ~ 10:00	千葉県	Chiba (Ichihara)	0.033
13	3/19 09:00 ~ 10:00	東京都	Tokyo (Shinjuku-ku	0.048
14	3/19 09:00 ~ 10:00	神奈川県	Kanagawa (Chigasa	0.049
15	3/19 09:00 ~ 10:00	新潟県	Niigata (Niigata)	0.047

16	3/19 09:00 ~ 10:00	富山県	Toyama (Imizu)	0.047
17	3/19 09:00 ~ 10:00	石川県	Ishikawa (Kanazawa	0.046
18	3/19 09:00 ~ 10:00	福井県	Fukui (Fukui)	0.045
19	3/19 09:00 ~ 10:00	山梨県	Yamanashi (Kofu)	0.044
20	3/19 09:00 ~ 10:00	長野県	Nagano (Nagano)	0.069
21	3/19 09:00 ~ 10:00	岐阜県	Gifu (Kakamigahara	0.062
22	3/19 09:00 ~ 10:00	静岡県	Shizuoka (Shizuoka	0.037
23	3/19 09:00 ~ 10:00	愛知県	Aichi (Nagoya)	0.041
24	3/19 09:00 ~ 10:00	三重県	Mie (Yokkaichi)	0.046
25	3/19 09:00 ~ 10:00	滋賀県	Shiga (Ohtsu)	0.034
26	3/19 09:00 ~ 10:00	京都府	Kyoto (Kyoto)	0.039
27	3/19 09:00 ~ 10:00	大阪府	Osaka (Osaka)	0.043
28	3/19 09:00 ~ 10:00	兵庫県	Hyogo (Kobe)	0.037
29	3/19 09:00 ~ 10:00	奈良県	Nara (Nara)	0.048
30	3/19 09:00 ~ 10:00	和歌山県	Wakayama (Wakaya	0.032
31	3/19 09:00 ~ 10:00	鳥取県	Tottori (Touhaku-g	0.063
32	3/19 09:00 ~ 10:00	島根県	Shimane (Matsue)	0.036
33	3/19 09:00 ~ 10:00	岡山県	Okayama (Okayama	0.049
34	3/19 09:00 ~ 10:00	広島県	Hiroshima (Hiroshin	0.05
35	3/19 09:00 ~ 10:00	山口県	Yamaguchi (Yamagı	0.094
36	3/19 09:00 ~ 10:00	徳島県	Tokushima (Tokush	0.039
37	3/19 09:00 ~ 10:00	香川県	Kagawa (Takamatsı	0.053
38	3/19 09:00 ~ 10:00	愛媛県	Ehime (Matsuyama	0.047
39	3/19 09:00 ~ 10:00	高知県	Kochi (Kochi)	0.026
40	3/19 09:00 ~ 10:00	福岡県	Fukuoka (Dazaifu)	0.037
41	3/19 09:00 ~ 10:00	佐賀県	Saga (Saga)	0.04
42	3/19 09:00 ~ 10:00	長崎県	Nagasaki (Ohmura)	0.029
43	3/19 09:00 ~ 10:00	熊本県	Kumamoto (Uto)	0.027
44	3/19 09:00 ~ 10:00	大分県	Oita (Oita)	0.05
45	3/19 09:00 ~ 10:00	宮崎県	Miyazaki (Miyazaki)	0.027
46	3/19 09:00 ~ 10:00	鹿児島県	Kagoshima (Kagosh	0.035
47	3/19 09:00 ~ 10:00	沖縄県	Okinawa (Uruma)	0.021
1	3/19 10:00 ~ 11:00	北海道	Hokkaido (Sapporo	0.028
2	3/19 10:00 ~ 11:00	青森県	Aomori (Aomori)	0.02
3	3/19 10:00 ~ 11:00	岩手県	Iwate (Morioka)	0.027
4	3/19 10:00 ~ 11:00	宮城県	Miyagi (Sendai)	
5	3/19 10:00 ~ 11:00	秋田県	Akita (Akita)	0.034
6	3/19 10:00 ~ 11:00	山形県	Yamagata (Yamaga	0.04
7	3/19 10:00 ~ 11:00	福島県	Fukushima (Futaba-gun)	
8	3/19 10:00 ~ 11:00	茨城県	Ibaraki (Mito)	0.174
9	3/19 10:00 ~ 11:00	栃木県	Tochigi (Itsunomiya	0.153
10	3/19 10:00 ~ 11:00	群馬県	Gunma (Maebashi)	0.079
11	3/19 10:00 ~ 11:00	埼玉県	Saitama (Saitama)	0.056
12	3/19 10:00 ~ 11:00	千葉県	Chiba (Ichihara)	0.033
13	3/19 10:00 ~ 11:00	東京都	Tokyo (Shinjuku-ku	0.047
14	3/19 10:00 ~ 11:00	神奈川県	Kanagawa (Chigasa	0.048
15	3/19 10:00 ~ 11:00	新潟県	Niigata (Niigata)	0.047
16	3/19 10:00 ~ 11:00	富山県	Toyama (Imizu)	0.047
17	3/19 10:00 ~ 11:00	石川県	Ishikawa (Kanazawa	0.046
18	3/19 10:00 ~ 11:00	福井県	Fukui (Fukui)	0.045
19	3/19 10:00 ~ 11:00	山梨県	Yamanashi (Kofu)	0.044
20	3/19 10:00 ~ 11:00	長野県	Nagano (Nagano)	0.069
21	3/19 10:00 ~ 11:00	岐阜県	Gifu (Kakamigahara	0.06
22	3/19 10:00 ~ 11:00	静岡県	Shizuoka (Shizuoka	0.038
23	3/19 10:00 ~ 11:00	愛知県	Aichi (Nagoya)	0.04
24	3/19 10:00 ~ 11:00	三重県	Mie (Yokkaichi)	0.046
25	3/19 10:00 ~ 11:00	滋賀県	Shiga (Ohtsu)	0.033

26	3/19 10:00 ~ 11:00	京都府	Kyoto (Kyoto)	0.038
27	3/19 10:00 ~ 11:00	大阪府	Osaka (Osaka)	0.043
28	3/19 10:00 ~ 11:00	兵庫県	Hyogo (Kobe)	0.037
29	3/19 10:00 ~ 11:00	奈良県	Nara (Nara)	0.048
30	3/19 10:00 ~ 11:00	和歌山県	Wakayama (Wakaya	0.032
31	3/19 10:00 ~ 11:00	鳥取県	Tottori (Touhaku-g	0.063
32	3/19 10:00 ~ 11:00	島根県	Shimane (Matsue)	0.036
33	3/19 10:00 ~ 11:00	岡山県	Okayama (Okayama	0.049
34	3/19 10:00 ~ 11:00	広島県	Hiroshima (Hiroshin	0.048
35	3/19 10:00 ~ 11:00	山口県	Yamaguchi (Yamagu	0.093
36	3/19 10:00 ~ 11:00	徳島県	Tokushima (Tokush	0.039
37	3/19 10:00 ~ 11:00	香川県	Kagawa (Takamatsu	0.053
38	3/19 10:00 ~ 11:00	愛媛県	Ehime (Matsuyama)	0.047
39	3/19 10:00 ~ 11:00	高知県	Kochi (Kochi)	0.025
40	3/19 10:00 ~ 11:00	福岡県	Fukuoka (Dazaifu)	0.036
41	3/19 10:00 ~ 11:00	佐賀県	Saga (Saga)	0.04
42	3/19 10:00 ~ 11:00	長崎県	Nagasaki (Ohmura)	0.029
43	3/19 10:00 ~ 11:00	熊本県	Kumamoto (Uto)	0.027
44	3/19 10:00 ~ 11:00	大分県	Oita (Oita)	0.05
45	3/19 10:00 ~ 11:00	宮崎県	Miyazaki (Miyazaki)	0.026
46	3/19 10:00 ~ 11:00	鹿児島県	Kagoshima (Kagosh	0.035
47	3/19 10:00 ~ 11:00	沖縄県	Okinawa (Uruma)	0.021
1	3/19 11:00 ~ 12:00	北海道	Hokkaido (Sapporo)	0.028
2	3/19 11:00 ~ 12:00	青森県	Aomori (Aomori)	0.021
3	3/19 11:00 ~ 12:00	岩手県	Iwate (Morioka)	0.027
4	3/19 11:00 ~ 12:00	宮城県	Miyagi (Sendai)	
5	3/19 11:00 ~ 12:00	秋田県	Akita (Akita)	0.035
6	3/19 11:00 ~ 12:00	山形県	Yamagata (Yamaga	0.04
7	3/19 11:00 ~ 12:00	福島県	Fukushima (Futaba-gun)	
8	3/19 11:00 ~ 12:00	茨城県	Ibaraki (Mito)	0.173
9	3/19 11:00 ~ 12:00	栃木県	Tochigi (Itsunomiya	0.152
10	3/19 11:00 ~ 12:00	群馬県	Gunma (Maebashi)	0.078
11	3/19 11:00 ~ 12:00	埼玉県	Saitama (Saitama)	0.056
12	3/19 11:00 ~ 12:00	千葉県	Chiba (Ichihara)	0.033
13	3/19 11:00 ~ 12:00	東京都	Tokyo (Shinjuku-ku	0.047
14	3/19 11:00 ~ 12:00	神奈川県	Kanagawa (Chigasa	0.048
15	3/19 11:00 ~ 12:00	新潟県	Niigata (Niigata)	0.046
16	3/19 11:00 ~ 12:00	富山県	Toyama (Imizu)	0.047
17	3/19 11:00 ~ 12:00	石川県	Ishikawa (Kanazawa	0.046
18	3/19 11:00 ~ 12:00	福井県	Fukui (Fukui)	0.045
19	3/19 11:00 ~ 12:00	山梨県	Yamanashi (Kofu)	0.044
20	3/19 11:00 ~ 12:00	長野県	Nagano (Nagano)	0.068
21	3/19 11:00 ~ 12:00	岐阜県	Gifu (Kakamigahara	0.061
22	3/19 11:00 ~ 12:00	静岡県	Shizuoka (Shizuoka	0.039
23	3/19 11:00 ~ 12:00	愛知県	Aichi (Nagoya)	0.04
24	3/19 11:00 ~ 12:00	三重県	Mie (Yokkaichi)	0.046
25	3/19 11:00 ~ 12:00	滋賀県	Shiga (Ohtsu)	0.033
26	3/19 11:00 ~ 12:00	京都府	Kyoto (Kyoto)	0.038
27	3/19 11:00 ~ 12:00	大阪府	Osaka (Osaka)	0.042
28	3/19 11:00 ~ 12:00	兵庫県	Hyogo (Kobe)	0.036
29	3/19 11:00 ~ 12:00	奈良県	Nara (Nara)	0.048
30	3/19 11:00 ~ 12:00	和歌山県	Wakayama (Wakaya	0.031
31	3/19 11:00 ~ 12:00	鳥取県	Tottori (Touhaku-g	0.063
32	3/19 11:00 ~ 12:00	島根県	Shimane (Matsue)	0.036
33	3/19 11:00 ~ 12:00	岡山県	Okayama (Okayama	0.049
34	3/19 11:00 ~ 12:00	広島県	Hiroshima (Hiroshin	0.048
35	3/19 11:00 ~ 12:00	山口県	Yamaguchi (Yamagu	0.092

36	3/19 11:00 ~ 12:00	徳島県	Tokushima (Tokush	0.038
37	3/19 11:00 ~ 12:00	香川県	Kagawa (Takamatsu	0.052
38	3/19 11:00 ~ 12:00	愛媛県	Ehime (Matsuyama)	0.046
39	3/19 11:00 ~ 12:00	高知県	Kochi (Kochi)	0.025
40	3/19 11:00 ~ 12:00	福岡県	Fukuoka (Dazaifu)	0.037
41	3/19 11:00 ~ 12:00	佐賀県	Saga (Saga)	0.04
42	3/19 11:00 ~ 12:00	長崎県	Nagasaki (Ohmura)	0.028
43	3/19 11:00 ~ 12:00	熊本県	Kumamoto (Uto)	0.027
44	3/19 11:00 ~ 12:00	大分県	Oita (Oita)	0.05
45	3/19 11:00 ~ 12:00	宮崎県	Miyazaki (Miyazaki)	0.026
46	3/19 11:00 ~ 12:00	鹿児島県	Kagoshima (Kagosh	0.034
47	3/19 11:00 ~ 12:00	沖縄県	Okinawa (Uruma)	0.021
1	3/19 12:00 ~ 13:00	北海道	Hokkaido (Sapporo)	0.028
2	3/19 12:00 ~ 13:00	青森県	Aomori (Aomori)	0.023
3	3/19 12:00 ~ 13:00	岩手県	Iwate (Morioka)	0.028
4	3/19 12:00 ~ 13:00	宮城県	Miyagi (Sendai)	
5	3/19 12:00 ~ 13:00	秋田県	Akita (Akita)	0.035
6	3/19 12:00 ~ 13:00	山形県	Yamagata (Yamaga	0.04
7	3/19 12:00 ~ 13:00	福島県	Fukushima (Futaba-gun)	
8	3/19 12:00 ~ 13:00	茨城県	Ibaraki (Mito)	0.172
9	3/19 12:00 ~ 13:00	栃木県	Tochigi (Itsunomiya	0.151
10	3/19 12:00 ~ 13:00	群馬県	Gunma (Maebashi)	0.077
11	3/19 12:00 ~ 13:00	埼玉県	Saitama (Saitama)	0.055
12	3/19 12:00 ~ 13:00	千葉県	Chiba (Ichihara)	0.033
13	3/19 12:00 ~ 13:00	東京都	Tokyo (Shinjuku-ku	0.047
14	3/19 12:00 ~ 13:00	神奈川県	Kanagawa (Chigasa	0.048
15	3/19 12:00 ~ 13:00	新潟県	Niigata (Niigata)	0.047
16	3/19 12:00 ~ 13:00	富山県	Toyama (Imizu)	0.047
17	3/19 12:00 ~ 13:00	石川県	Ishikawa (Kanazawa	0.047
18	3/19 12:00 ~ 13:00	福井県	Fukui (Fukui)	0.044
19	3/19 12:00 ~ 13:00	山梨県	Yamanashi (Kofu)	0.044
20	3/19 12:00 ~ 13:00	長野県	Nagano (Nagano)	0.067
21	3/19 12:00 ~ 13:00	岐阜県	Gifu (Kakamigahara	0.06
22	3/19 12:00 ~ 13:00	静岡県	Shizuoka (Shizuoka	0.04
23	3/19 12:00 ~ 13:00	愛知県	Aichi (Nagoya)	0.039
24	3/19 12:00 ~ 13:00	三重県	Mie (Yokkaichi)	0.046
25	3/19 12:00 ~ 13:00	滋賀県	Shiga (Ohtsu)	0.033
26	3/19 12:00 ~ 13:00	京都府	Kyoto (Kyoto)	0.038
27	3/19 12:00 ~ 13:00	大阪府	Osaka (Osaka)	0.043
28	3/19 12:00 ~ 13:00	兵庫県	Hyogo (Kobe)	0.036
29	3/19 12:00 ~ 13:00	奈良県	Nara (Nara)	0.047
30	3/19 12:00 ~ 13:00	和歌山県	Wakayama (Wakaya	0.031
31	3/19 12:00 ~ 13:00	鳥取県	Tottori (Touhaku-g	0.063
32	3/19 12:00 ~ 13:00	島根県	Shimane (Matsue)	0.036
33	3/19 12:00 ~ 13:00	岡山県	Okayama (Okayama	0.048
34	3/19 12:00 ~ 13:00	広島県	Hiroshima (Hiroshin	0.047
35	3/19 12:00 ~ 13:00	山口県	Yamaguchi (Yamagu	0.092
36	3/19 12:00 ~ 13:00	徳島県	Tokushima (Tokush	0.038
37	3/19 12:00 ~ 13:00	香川県	Kagawa (Takamatsu	0.052
38	3/19 12:00 ~ 13:00	愛媛県	Ehime (Matsuyama)	0.046
39	3/19 12:00 ~ 13:00	高知県	Kochi (Kochi)	0.025
40	3/19 12:00 ~ 13:00	福岡県	Fukuoka (Dazaifu)	0.036
41	3/19 12:00 ~ 13:00	佐賀県	Saga (Saga)	0.04
42	3/19 12:00 ~ 13:00	長崎県	Nagasaki (Ohmura)	0.028
43	3/19 12:00 ~ 13:00	熊本県	Kumamoto (Uto)	0.026
44	3/19 12:00 ~ 13:00	大分県	Oita (Oita)	0.05
45	3/19 12:00 ~ 13:00	宮崎県	Miyazaki (Miyazaki)	0.026

46	3/19 12:00 ~ 13:00	鹿児島県	Kagoshima (Kagosh	0.034
47	3/19 12:00 ~ 13:00	沖縄県	Okinawa (Uruma)	0.021
1	3/19 13:00 ~ 14:00	北海道	Hokkaido (Sapporo)	0.028
2	3/19 13:00 ~ 14:00	青森県	Aomori (Aomori)	0.024
3	3/19 13:00 ~ 14:00	岩手県	Iwate (Morioka)	0.031
4	3/19 13:00 ~ 14:00	宮城県	Miyagi (Sendai)	
5	3/19 13:00 ~ 14:00	秋田県	Akita (Akita)	0.035
6	3/19 13:00 ~ 14:00	山形県	Yamagata (Yamaga	0.041
7	3/19 13:00 ~ 14:00	福島県	Fukushima (Futaba-gun)	
8	3/19 13:00 ~ 14:00	茨城県	Ibaraki (Mito)	0.171
9	3/19 13:00 ~ 14:00	栃木県	Tochigi (Itsunomiya	0.15
10	3/19 13:00 ~ 14:00	群馬県	Gunma (Maebashi)	0.077
11	3/19 13:00 ~ 14:00	埼玉県	Saitama (Saitama)	0.055
12	3/19 13:00 ~ 14:00	千葉県	Chiba (Ichihara)	0.033
13	3/19 13:00 ~ 14:00	東京都	Tokyo (Shinjuku-ku	0.047
14	3/19 13:00 ~ 14:00	神奈川県	Kanagawa (Chigasa	0.048
15	3/19 13:00 ~ 14:00	新潟県	Niigata (Niigata)	0.046
16	3/19 13:00 ~ 14:00	富山県	Toyama (Imizu)	0.047
17	3/19 13:00 ~ 14:00	石川県	Ishikawa (Kanazawa	0.046
18	3/19 13:00 ~ 14:00	福井県	Fukui (Fukui)	0.045
19	3/19 13:00 ~ 14:00	山梨県	Yamanashi (Kofu)	0.044
20	3/19 13:00 ~ 14:00	長野県	Nagano (Nagano)	0.067
21	3/19 13:00 ~ 14:00	岐阜県	Gifu (Kakamigahara	0.061
22	3/19 13:00 ~ 14:00	静岡県	Shizuoka (Shizuoka	0.04
23	3/19 13:00 ~ 14:00	愛知県	Aichi (Nagoya)	0.039
24	3/19 13:00 ~ 14:00	三重県	Mie (Yokkaichi)	0.046
25	3/19 13:00 ~ 14:00	滋賀県	Shiga (Ohtsu)	0.033
26	3/19 13:00 ~ 14:00	京都府	Kyoto (Kyoto)	0.038
27	3/19 13:00 ~ 14:00	大阪府	Osaka (Osaka)	0.042
28	3/19 13:00 ~ 14:00	兵庫県	Hyogo (Kobe)	0.036
29	3/19 13:00 ~ 14:00	奈良県	Nara (Nara)	0.047
30	3/19 13:00 ~ 14:00	和歌山県	Wakayama (Wakaya	0.031
31	3/19 13:00 ~ 14:00	鳥取県	Tottori (Touhaku-g	0.063
32	3/19 13:00 ~ 14:00	島根県	Shimane (Matsue)	0.036
33	3/19 13:00 ~ 14:00	岡山県	Okayama (Okayama	0.048
34	3/19 13:00 ~ 14:00	広島県	Hiroshima (Hiroshin	0.046
35	3/19 13:00 ~ 14:00	山口県	Yamaguchi (Yamagu	0.092
36	3/19 13:00 ~ 14:00	徳島県	Tokushima (Tokush	0.038
37	3/19 13:00 ~ 14:00	香川県	Kagawa (Takamatsu	0.052
38	3/19 13:00 ~ 14:00	愛媛県	Ehime (Matsuyama)	0.046
39	3/19 13:00 ~ 14:00	高知県	Kochi (Kochi)	0.025
40	3/19 13:00 ~ 14:00	福岡県	Fukuoka (Dazaifu)	0.036
41	3/19 13:00 ~ 14:00	佐賀県	Saga (Saga)	0.04
42	3/19 13:00 ~ 14:00	長崎県	Nagasaki (Ohmura)	0.028
43	3/19 13:00 ~ 14:00	熊本県	Kumamoto (Uto)	0.026
44	3/19 13:00 ~ 14:00	大分県	Oita (Oita)	0.05
45	3/19 13:00 ~ 14:00	宮崎県	Miyazaki (Miyazaki)	0.026
46	3/19 13:00 ~ 14:00	鹿児島県	Kagoshima (Kagosh	0.034
47	3/19 13:00 ~ 14:00	沖縄県	Okinawa (Uruma)	0.02
1	3/19 14:00 ~ 15:00	北海道	Hokkaido (Sapporo)	0.028
2	3/19 14:00 ~ 15:00	青森県	Aomori (Aomori)	0.021
3	3/19 14:00 ~ 15:00	岩手県	Iwate (Morioka)	0.031
4	3/19 14:00 ~ 15:00	宮城県	Miyagi (Sendai)	
5	3/19 14:00 ~ 15:00	秋田県	Akita (Akita)	0.034
6	3/19 14:00 ~ 15:00	山形県	Yamagata (Yamaga	0.044
7	3/19 14:00 ~ 15:00	福島県	Fukushima (Futaba-gun)	
8	3/19 14:00 ~ 15:00	茨城県	Ibaraki (Mito)	0.171

9	3/19 14:00 ~ 15:00	栃木県	Tochigi (Itsunomiya	0.149
10	3/19 14:00 ~ 15:00	群馬県	Gunma (Maebashi)	0.077
11	3/19 14:00 ~ 15:00	埼玉県	Saitama (Saitama)	0.055
12	3/19 14:00 ~ 15:00	千葉県	Chiba (Ichihara)	0.033
13	3/19 14:00 ~ 15:00	東京都	Tokyo (Shinjuku-ku	0.047
14	3/19 14:00 ~ 15:00	神奈川県	Kanagawa (Chigasa	0.048
15	3/19 14:00 ~ 15:00	新潟県	Niigata (Niigata)	0.046
16	3/19 14:00 ~ 15:00	富山県	Toyama (Imizu)	0.047
17	3/19 14:00 ~ 15:00	石川県	Ishikawa (Kanazawa	0.047
18	3/19 14:00 ~ 15:00	福井県	Fukui (Fukui)	0.044
19	3/19 14:00 ~ 15:00	山梨県	Yamanashi (Kofu)	0.043
20	3/19 14:00 ~ 15:00	長野県	Nagano (Nagano)	0.066
21	3/19 14:00 ~ 15:00	岐阜県	Gifu (Kakamigahara	0.06
22	3/19 14:00 ~ 15:00	静岡県	Shizuoka (Shizuoka	0.04
23	3/19 14:00 ~ 15:00	愛知県	Aichi (Nagoya)	0.039
24	3/19 14:00 ~ 15:00	三重県	Mie (Yokkaichi)	0.046
25	3/19 14:00 ~ 15:00	滋賀県	Shiga (Ohtsu)	0.033
26	3/19 14:00 ~ 15:00	京都府	Kyoto (Kyoto)	0.037
27	3/19 14:00 ~ 15:00	大阪府	Osaka (Osaka)	0.042
28	3/19 14:00 ~ 15:00	兵庫県	Hyogo (Kobe)	0.036
29	3/19 14:00 ~ 15:00	奈良県	Nara (Nara)	0.047
30	3/19 14:00 ~ 15:00	和歌山県	Wakayama (Wakaya	0.031
31	3/19 14:00 ~ 15:00	鳥取県	Tottori (Touhaku-g	0.063
32	3/19 14:00 ~ 15:00	島根県	Shimane (Matsue)	0.036
33	3/19 14:00 ~ 15:00	岡山県	Okayama (Okayama	0.048
34	3/19 14:00 ~ 15:00	広島県	Hiroshima (Hiroshin	0.046
35	3/19 14:00 ~ 15:00	山口県	Yamaguchi (Yamagı	0.092
36	3/19 14:00 ~ 15:00	徳島県	Tokushima (Tokush	0.038
37	3/19 14:00 ~ 15:00	香川県	Kagawa (Takamatsı	0.051
38	3/19 14:00 ~ 15:00	愛媛県	Ehime (Matsuyama)	0.047
39	3/19 14:00 ~ 15:00	高知県	Kochi (Kochi)	0.025
40	3/19 14:00 ~ 15:00	福岡県	Fukuoka (Dazaifu)	0.036
41	3/19 14:00 ~ 15:00	佐賀県	Saga (Saga)	0.04
42	3/19 14:00 ~ 15:00	長崎県	Nagasaki (Ohmura)	0.028
43	3/19 14:00 ~ 15:00	熊本県	Kumamoto (Uto)	0.026
44	3/19 14:00 ~ 15:00	大分県	Oita (Oita)	0.049
45	3/19 14:00 ~ 15:00	宮崎県	Miyazaki (Miyazaki)	0.026
46	3/19 14:00 ~ 15:00	鹿児島県	Kagoshima (Kagosh	0.034
47	3/19 14:00 ~ 15:00	沖縄県	Okinawa (Uruma)	0.021
1	3/19 15:00 ~ 16:00	北海道	Hokkaido (Sapporo)	0.028
2	3/19 15:00 ~ 16:00	青森県	Aomori (Aomori)	0.021
3	3/19 15:00 ~ 16:00	岩手県	Iwate (Morioka)	0.029
4	3/19 15:00 ~ 16:00	宮城県	Miyagi (Sendai)	
5	3/19 15:00 ~ 16:00	秋田県	Akita (Akita)	0.034
6	3/19 15:00 ~ 16:00	山形県	Yamagata (Yamaga	0.045
7	3/19 15:00 ~ 16:00	福島県	Fukushima (Futaba-gun)	
8	3/19 15:00 ~ 16:00	茨城県	Ibaraki (Mito)	0.171
9	3/19 15:00 ~ 16:00	栃木県	Tochigi (Itsunomiya	0.148
10	3/19 15:00 ~ 16:00	群馬県	Gunma (Maebashi)	0.076
11	3/19 15:00 ~ 16:00	埼玉県	Saitama (Saitama)	0.055
12	3/19 15:00 ~ 16:00	千葉県	Chiba (Ichihara)	0.033
13	3/19 15:00 ~ 16:00	東京都	Tokyo (Shinjuku-ku	0.046
14	3/19 15:00 ~ 16:00	神奈川県	Kanagawa (Chigasa	0.048
15	3/19 15:00 ~ 16:00	新潟県	Niigata (Niigata)	0.046
16	3/19 15:00 ~ 16:00	富山県	Toyama (Imizu)	0.047
17	3/19 15:00 ~ 16:00	石川県	Ishikawa (Kanazawa	0.047
18	3/19 15:00 ~ 16:00	福井県	Fukui (Fukui)	0.044

http://www.mext.go.jp/component/a_menu/other/detail/_icsFiles/afieldfile/2011/03/15/1303577_05_1.pd
f

19	3/19 15:00 ~ 16:00	山梨県	Yamanashi (Kofu)	0.044
20	3/19 15:00 ~ 16:00	長野県	Nagano (Nagano)	0.067
21	3/19 15:00 ~ 16:00	岐阜県	Gifu (Kakamigahara	0.06
22	3/19 15:00 ~ 16:00	静岡県	Shizuoka (Shizuoka	0.039
23	3/19 15:00 ~ 16:00	愛知県	Aichi (Nagoya)	0.039
24	3/19 15:00 ~ 16:00	三重県	Mie (Yokkaichi)	0.046
25	3/19 15:00 ~ 16:00	滋賀県	Shiga (Ohtsu)	0.033
26	3/19 15:00 ~ 16:00	京都府	Kyoto (Kyoto)	0.037
27	3/19 15:00 ~ 16:00	大阪府	Osaka (Osaka)	0.042
28	3/19 15:00 ~ 16:00	兵庫県	Hyogo (Kobe)	0.036
29	3/19 15:00 ~ 16:00	奈良県	Nara (Nara)	0.047
30	3/19 15:00 ~ 16:00	和歌山県	Wakayama (Wakaya	0.031
31	3/19 15:00 ~ 16:00	鳥取県	Tottori (Touhaku-g	0.062
32	3/19 15:00 ~ 16:00	島根県	Shimane (Matsue)	0.036
33	3/19 15:00 ~ 16:00	岡山県	Okayama (Okayama	0.048
34	3/19 15:00 ~ 16:00	広島県	Hiroshima (Hiroshin	0.046
35	3/19 15:00 ~ 16:00	山口県	Yamaguchi (Yamagı	0.092
36	3/19 15:00 ~ 16:00	徳島県	Tokushima (Tokush	0.037
37	3/19 15:00 ~ 16:00	香川県	Kagawa (Takamatsı	0.052
38	3/19 15:00 ~ 16:00	愛媛県	Ehime (Matsuyama	0.047
39	3/19 15:00 ~ 16:00	高知県	Kochi (Kochi)	0.025
40	3/19 15:00 ~ 16:00	福岡県	Fukuoka (Dazaifu)	0.036
41	3/19 15:00 ~ 16:00	佐賀県	Saga (Saga)	0.039
42	3/19 15:00 ~ 16:00	長崎県	Nagasaki (Ohmura)	0.028
43	3/19 15:00 ~ 16:00	熊本県	Kumamoto (Uto)	0.026
44	3/19 15:00 ~ 16:00	大分県	Oita (Oita)	0.049
45	3/19 15:00 ~ 16:00	宮崎県	Miyazaki (Miyazaki)	0.026
46	3/19 15:00 ~ 16:00	鹿児島県	Kagoshima (Kagosh	0.034
47	3/19 15:00 ~ 16:00	沖縄県	Okinawa (Uruma)	0.02
1	3/19 16:00 ~ 17:00	北海道	Hokkaido (Sapporo	0.028
2	3/19 16:00 ~ 17:00	青森県	Aomori (Aomori)	0.02
3	3/19 16:00 ~ 17:00	岩手県	Iwate (Morioka)	0.029
4	3/19 16:00 ~ 17:00	宮城県	Miyagi (Sendai)	
5	3/19 16:00 ~ 17:00	秋田県	Akita (Akita)	0.034
6	3/19 16:00 ~ 17:00	山形県	Yamagata (Yamaga	0.042
7	3/19 16:00 ~ 17:00	福島県	Fukushima (Futaba-gun)	
8	3/19 16:00 ~ 17:00	茨城県	Ibaraki (Mito)	0.17
9	3/19 16:00 ~ 17:00	栃木県	Tochigi (Itsunomiya	0.148
10	3/19 16:00 ~ 17:00	群馬県	Gunma (Maebashi)	0.076
11	3/19 16:00 ~ 17:00	埼玉県	Saitama (Saitama)	0.055
12	3/19 16:00 ~ 17:00	千葉県	Chiba (Ichihara)	0.032
13	3/19 16:00 ~ 17:00	東京都	Tokyo (Shinjuku-kı	0.046
14	3/19 16:00 ~ 17:00	神奈川県	Kanagawa (Chigasa	0.048
15	3/19 16:00 ~ 17:00	新潟県	Niigata (Niigata)	0.047
16	3/19 16:00 ~ 17:00	富山県	Toyama (Imizu)	0.047
17	3/19 16:00 ~ 17:00	石川県	Ishikawa (Kanazawa	0.046
18	3/19 16:00 ~ 17:00	福井県	Fukui (Fukui)	0.045
19	3/19 16:00 ~ 17:00	山梨県	Yamanashi (Kofu)	0.044
20	3/19 16:00 ~ 17:00	長野県	Nagano (Nagano)	0.066
21	3/19 16:00 ~ 17:00	岐阜県	Gifu (Kakamigahara	0.06
22	3/19 16:00 ~ 17:00	静岡県	Shizuoka (Shizuoka	0.038
23	3/19 16:00 ~ 17:00	愛知県	Aichi (Nagoya)	0.039
24	3/19 16:00 ~ 17:00	三重県	Mie (Yokkaichi)	0.046
25	3/19 16:00 ~ 17:00	滋賀県	Shiga (Ohtsu)	0.033
26	3/19 16:00 ~ 17:00	京都府	Kyoto (Kyoto)	0.038
27	3/19 16:00 ~ 17:00	大阪府	Osaka (Osaka)	0.042
28	3/19 16:00 ~ 17:00	兵庫県	Hyogo (Kobe)	0.036

29	3/19 16:00 ~ 17:00	奈良県	Nara (Nara)	0.047
30	3/19 16:00 ~ 17:00	和歌山県	Wakayama (Wakaya	0.031
31	3/19 16:00 ~ 17:00	鳥取県	Tottori (Touhaku-g	0.063
32	3/19 16:00 ~ 17:00	島根県	Shimane (Matsue)	0.036
33	3/19 16:00 ~ 17:00	岡山県	Okayama (Okayama	0.048
34	3/19 16:00 ~ 17:00	広島県	Hiroshima (Hiroshin	0.046
35	3/19 16:00 ~ 17:00	山口県	Yamaguchi (Yamagı	0.092
36	3/19 16:00 ~ 17:00	徳島県	Tokushima (Tokush	0.037
37	3/19 16:00 ~ 17:00	香川県	Kagawa (Takamatsı	0.051
38	3/19 16:00 ~ 17:00	愛媛県	Ehime (Matsuyama)	0.047
39	3/19 16:00 ~ 17:00	高知県	Kochi (Kochi)	0.025
40	3/19 16:00 ~ 17:00	福岡県	Fukuoka (Dazaifu)	0.036
41	3/19 16:00 ~ 17:00	佐賀県	Saga (Saga)	0.039
42	3/19 16:00 ~ 17:00	長崎県	Nagasaki (Ohmura)	0.028
43	3/19 16:00 ~ 17:00	熊本県	Kumamoto (Uto)	0.027
44	3/19 16:00 ~ 17:00	大分県	Oita (Oita)	0.05
45	3/19 16:00 ~ 17:00	宮崎県	Miyazaki (Miyazaki)	0.026
46	3/19 16:00 ~ 17:00	鹿児島県	Kagoshima (Kagosh	0.034
47	3/19 16:00 ~ 17:00	沖縄県	Okinawa (Uruma)	0.02
1	3/19 17:00 ~ 18:00	北海道	Hokkaido (Sapporo)	0.028
2	3/19 17:00 ~ 18:00	青森県	Aomori (Aomori)	0.02
3	3/19 17:00 ~ 18:00	岩手県	Iwate (Morioka)	0.027
4	3/19 17:00 ~ 18:00	宮城県	Miyagi (Sendai)	
5	3/19 17:00 ~ 18:00	秋田県	Akita (Akita)	0.034
6	3/19 17:00 ~ 18:00	山形県	Yamagata (Yamaga	0.041
7	3/19 17:00 ~ 18:00	福島県	Fukushima (Futaba-gun)	
8	3/19 17:00 ~ 18:00	茨城県	Ibaraki (Mito)	0.169
9	3/19 17:00 ~ 18:00	栃木県	Tochigi (Itsunomiya	0.148
10	3/19 17:00 ~ 18:00	群馬県	Gunma (Maebashi)	0.076
11	3/19 17:00 ~ 18:00	埼玉県	Saitama (Saitama)	0.055
12	3/19 17:00 ~ 18:00	千葉県	Chiba (Ichihara)	0.033
13	3/19 17:00 ~ 18:00	東京都	Tokyo (Shinjuku-kı	0.046
14	3/19 17:00 ~ 18:00	神奈川県	Kanagawa (Chigasa	0.048
15	3/19 17:00 ~ 18:00	新潟県	Niigata (Niigata)	0.047
16	3/19 17:00 ~ 18:00	富山県	Toyama (Imizu)	0.047
17	3/19 17:00 ~ 18:00	石川県	Ishikawa (Kanazawa	0.046
18	3/19 17:00 ~ 18:00	福井県	Fukui (Fukui)	0.045
19	3/19 17:00 ~ 18:00	山梨県	Yamanashi (Kofu)	0.043
20	3/19 17:00 ~ 18:00	長野県	Nagano (Nagano)	0.066
21	3/19 17:00 ~ 18:00	岐阜県	Gifu (Kakamigahara	0.06
22	3/19 17:00 ~ 18:00	静岡県	Shizuoka (Shizuoka	0.037
23	3/19 17:00 ~ 18:00	愛知県	Aichi (Nagoya)	0.039
24	3/19 17:00 ~ 18:00	三重県	Mie (Yokkaichi)	0.046
25	3/19 17:00 ~ 18:00	滋賀県	Shiga (Ohtsu)	0.033
26	3/19 17:00 ~ 18:00	京都府	Kyoto (Kyoto)	0.038
27	3/19 17:00 ~ 18:00	大阪府	Osaka (Osaka)	0.042
28	3/19 17:00 ~ 18:00	兵庫県	Hyogo (Kobe)	0.036
29	3/19 17:00 ~ 18:00	奈良県	Nara (Nara)	0.047
30	3/19 17:00 ~ 18:00	和歌山県	Wakayama (Wakaya	0.031
31	3/19 17:00 ~ 18:00	鳥取県	Tottori (Touhaku-g	0.062
32	3/19 17:00 ~ 18:00	島根県	Shimane (Matsue)	0.036
33	3/19 17:00 ~ 18:00	岡山県	Okayama (Okayama	0.048
34	3/19 17:00 ~ 18:00	広島県	Hiroshima (Hiroshin	0.046
35	3/19 17:00 ~ 18:00	山口県	Yamaguchi (Yamagı	0.091
36	3/19 17:00 ~ 18:00	徳島県	Tokushima (Tokush	0.038
37	3/19 17:00 ~ 18:00	香川県	Kagawa (Takamatsı	0.052
38	3/19 17:00 ~ 18:00	愛媛県	Ehime (Matsuyama)	0.047

39	3/19 17:00 ~ 18:00	高知県	Kochi (Kochi)	0.024
40	3/19 17:00 ~ 18:00	福岡県	Fukuoka (Dazaifu)	0.036
41	3/19 17:00 ~ 18:00	佐賀県	Saga (Saga)	0.039
42	3/19 17:00 ~ 18:00	長崎県	Nagasaki (Ohmura)	0.028
43	3/19 17:00 ~ 18:00	熊本県	Kumamoto (Uto)	0.026
44	3/19 17:00 ~ 18:00	大分県	Oita (Oita)	0.05
45	3/19 17:00 ~ 18:00	宮崎県	Miyazaki (Miyazaki)	0.026
46	3/19 17:00 ~ 18:00	鹿児島県	Kagoshima (Kagosh	0.034
47	3/19 17:00 ~ 18:00	沖縄県	Okinawa (Uruma)	0.021
1	3/19 18:00 ~ 19:00	北海道	Hokkaido (Sapporo)	0.029
2	3/19 18:00 ~ 19:00	青森県	Aomori (Aomori)	0.02
3	3/19 18:00 ~ 19:00	岩手県	Iwate (Morioka)	0.027
4	3/19 18:00 ~ 19:00	宮城県	Miyagi (Sendai)	
5	3/19 18:00 ~ 19:00	秋田県	Akita (Akita)	0.034
6	3/19 18:00 ~ 19:00	山形県	Yamagata (Yamaga	0.04
7	3/19 18:00 ~ 19:00	福島県	Fukushima (Futaba-gun)	
8	3/19 18:00 ~ 19:00	茨城県	Ibaraki (Mito)	0.168
9	3/19 18:00 ~ 19:00	栃木県	Tochigi (Itsunomiya	0.148
10	3/19 18:00 ~ 19:00	群馬県	Gunma (Maebashi)	0.076
11	3/19 18:00 ~ 19:00	埼玉県	Saitama (Saitama)	0.055
12	3/19 18:00 ~ 19:00	千葉県	Chiba (Ichihara)	0.033
13	3/19 18:00 ~ 19:00	東京都	Tokyo (Shinjuku-ku	0.046
14	3/19 18:00 ~ 19:00	神奈川県	Kanagawa (Chigasa	0.048
15	3/19 18:00 ~ 19:00	新潟県	Niigata (Niigata)	0.046
16	3/19 18:00 ~ 19:00	富山県	Toyama (Imizu)	0.047
17	3/19 18:00 ~ 19:00	石川県	Ishikawa (Kanazawa	0.047
18	3/19 18:00 ~ 19:00	福井県	Fukui (Fukui)	0.045
19	3/19 18:00 ~ 19:00	山梨県	Yamanashi (Kofu)	0.044
20	3/19 18:00 ~ 19:00	長野県	Nagano (Nagano)	0.066
21	3/19 18:00 ~ 19:00	岐阜県	Gifu (Kakamigahara	0.06
22	3/19 18:00 ~ 19:00	静岡県	Shizuoka (Shizuoka	0.037
23	3/19 18:00 ~ 19:00	愛知県	Aichi (Nagoya)	0.039
24	3/19 18:00 ~ 19:00	三重県	Mie (Yokkaichi)	0.046
25	3/19 18:00 ~ 19:00	滋賀県	Shiga (Ohtsu)	0.033
26	3/19 18:00 ~ 19:00	京都府	Kyoto (Kyoto)	0.038
27	3/19 18:00 ~ 19:00	大阪府	Osaka (Osaka)	0.042
28	3/19 18:00 ~ 19:00	兵庫県	Hyogo (Kobe)	0.036
29	3/19 18:00 ~ 19:00	奈良県	Nara (Nara)	0.047
30	3/19 18:00 ~ 19:00	和歌山県	Wakayama (Wakaya	0.031
31	3/19 18:00 ~ 19:00	鳥取県	Tottori (Touhaku-g	0.062
32	3/19 18:00 ~ 19:00	島根県	Shimane (Matsue)	0.036
33	3/19 18:00 ~ 19:00	岡山県	Okayama (Okayama	0.048
34	3/19 18:00 ~ 19:00	広島県	Hiroshima (Hiroshin	0.046
35	3/19 18:00 ~ 19:00	山口県	Yamaguchi (Yamagu	0.092
36	3/19 18:00 ~ 19:00	徳島県	Tokushima (Tokush	0.038
37	3/19 18:00 ~ 19:00	香川県	Kagawa (Takamatsu	0.052
38	3/19 18:00 ~ 19:00	愛媛県	Ehime (Matsuyama)	0.047
39	3/19 18:00 ~ 19:00	高知県	Kochi (Kochi)	0.025
40	3/19 18:00 ~ 19:00	福岡県	Fukuoka (Dazaifu)	0.036
41	3/19 18:00 ~ 19:00	佐賀県	Saga (Saga)	0.039
42	3/19 18:00 ~ 19:00	長崎県	Nagasaki (Ohmura)	0.028
43	3/19 18:00 ~ 19:00	熊本県	Kumamoto (Uto)	0.026
44	3/19 18:00 ~ 19:00	大分県	Oita (Oita)	0.049
45	3/19 18:00 ~ 19:00	宮崎県	Miyazaki (Miyazaki)	0.026
46	3/19 18:00 ~ 19:00	鹿児島県	Kagoshima (Kagosh	0.034
47	3/19 18:00 ~ 19:00	沖縄県	Okinawa (Uruma)	0.021
1	3/19 19:00 ~ 20:00	北海道	Hokkaido (Sapporo)	0.029

2	3/19 19:00 ~ 20:00	青森県	Aomori (Aomori)	0.021
3	3/19 19:00 ~ 20:00	岩手県	Iwate (Morioka)	0.027
4	3/19 19:00 ~ 20:00	宮城県	Miyagi (Sendai)	
5	3/19 19:00 ~ 20:00	秋田県	Akita (Akita)	0.034
6	3/19 19:00 ~ 20:00	山形県	Yamagata (Yamaga	0.04
7	3/19 19:00 ~ 20:00	福島県	Fukushima (Futaba-gun)	
8	3/19 19:00 ~ 20:00	茨城県	Ibaraki (Mito)	0.167
9	3/19 19:00 ~ 20:00	栃木県	Tochigi (Itsunomiya	0.147
10	3/19 19:00 ~ 20:00	群馬県	Gunma (Maebashi)	0.075
11	3/19 19:00 ~ 20:00	埼玉県	Saitama (Saitama)	0.055
12	3/19 19:00 ~ 20:00	千葉県	Chiba (Ichihara)	0.033
13	3/19 19:00 ~ 20:00	東京都	Tokyo (Shinjuku-ku	0.046
14	3/19 19:00 ~ 20:00	神奈川県	Kanagawa (Chigasa	0.048
15	3/19 19:00 ~ 20:00	新潟県	Niigata (Niigata)	0.046
16	3/19 19:00 ~ 20:00	富山県	Toyama (Imizu)	0.047
17	3/19 19:00 ~ 20:00	石川県	Ishikawa (Kanazawa	0.047
18	3/19 19:00 ~ 20:00	福井県	Fukui (Fukui)	0.045
19	3/19 19:00 ~ 20:00	山梨県	Yamanashi (Kofu)	0.044
20	3/19 19:00 ~ 20:00	長野県	Nagano (Nagano)	0.066
21	3/19 19:00 ~ 20:00	岐阜県	Gifu (Kakamigahara	0.06
22	3/19 19:00 ~ 20:00	静岡県	Shizuoka (Shizuoka	0.037
23	3/19 19:00 ~ 20:00	愛知県	Aichi (Nagoya)	0.039
24	3/19 19:00 ~ 20:00	三重県	Mie (Yokkaichi)	0.046
25	3/19 19:00 ~ 20:00	滋賀県	Shiga (Ohtsu)	0.033
26	3/19 19:00 ~ 20:00	京都府	Kyoto (Kyoto)	0.038
27	3/19 19:00 ~ 20:00	大阪府	Osaka (Osaka)	0.042
28	3/19 19:00 ~ 20:00	兵庫県	Hyogo (Kobe)	0.037
29	3/19 19:00 ~ 20:00	奈良県	Nara (Nara)	0.047
30	3/19 19:00 ~ 20:00	和歌山県	Wakayama (Wakaya	0.031
31	3/19 19:00 ~ 20:00	鳥取県	Tottori (Touhaku-g	0.062
32	3/19 19:00 ~ 20:00	島根県	Shimane (Matsue)	0.036
33	3/19 19:00 ~ 20:00	岡山県	Okayama (Okayama	0.048
34	3/19 19:00 ~ 20:00	広島県	Hiroshima (Hiroshin	0.046
35	3/19 19:00 ~ 20:00	山口県	Yamaguchi (Yamagu	0.092
36	3/19 19:00 ~ 20:00	徳島県	Tokushima (Tokush	0.037
37	3/19 19:00 ~ 20:00	香川県	Kagawa (Takamatsu	0.052
38	3/19 19:00 ~ 20:00	愛媛県	Ehime (Matsuyama	0.047
39	3/19 19:00 ~ 20:00	高知県	Kochi (Kochi)	0.025
40	3/19 19:00 ~ 20:00	福岡県	Fukuoka (Dazaifu)	0.036
41	3/19 19:00 ~ 20:00	佐賀県	Saga (Saga)	0.039
42	3/19 19:00 ~ 20:00	長崎県	Nagasaki (Ohmura)	0.029
43	3/19 19:00 ~ 20:00	熊本県	Kumamoto (Uto)	0.027
44	3/19 19:00 ~ 20:00	大分県	Oita (Oita)	0.05
45	3/19 19:00 ~ 20:00	宮崎県	Miyazaki (Miyazaki)	0.026
46	3/19 19:00 ~ 20:00	鹿児島県	Kagoshima (Kagosh	0.034
47	3/19 19:00 ~ 20:00	沖縄県	Okinawa (Uruma)	0.021
1	3/19 20:00 ~ 21:00	北海道	Hokkaido (Sapporo)	0.029
2	3/19 20:00 ~ 21:00	青森県	Aomori (Aomori)	0.021
3	3/19 20:00 ~ 21:00	岩手県	Iwate (Morioka)	0.026
4	3/19 20:00 ~ 21:00	宮城県	Miyagi (Sendai)	
5	3/19 20:00 ~ 21:00	秋田県	Akita (Akita)	0.034
6	3/19 20:00 ~ 21:00	山形県	Yamagata (Yamaga	0.04
7	3/19 20:00 ~ 21:00	福島県	Fukushima (Futaba-gun)	
8	3/19 20:00 ~ 21:00	茨城県	Ibaraki (Mito)	0.167
9	3/19 20:00 ~ 21:00	栃木県	Tochigi (Itsunomiya	0.147
10	3/19 20:00 ~ 21:00	群馬県	Gunma (Maebashi)	0.075
11	3/19 20:00 ~ 21:00	埼玉県	Saitama (Saitama)	0.055

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12	3/19 20:00 ~ 21:00	千葉県	Chiba (Ichihara)	0.033
13	3/19 20:00 ~ 21:00	東京都	Tokyo (Shinjuku-ku	0.046
14	3/19 20:00 ~ 21:00	神奈川県	Kanagawa (Chigasa	0.048
15	3/19 20:00 ~ 21:00	新潟県	Niigata (Niigata)	0.046
16	3/19 20:00 ~ 21:00	富山県	Toyama (Imizu)	0.047
17	3/19 20:00 ~ 21:00	石川県	Ishikawa (Kanazawa	0.047
18	3/19 20:00 ~ 21:00	福井県	Fukui (Fukui)	0.045
19	3/19 20:00 ~ 21:00	山梨県	Yamanashi (Kofu)	0.044
20	3/19 20:00 ~ 21:00	長野県	Nagano (Nagano)	0.067
21	3/19 20:00 ~ 21:00	岐阜県	Gifu (Kakamigahara	0.06
22	3/19 20:00 ~ 21:00	静岡県	Shizuoka (Shizuoka	0.037
23	3/19 20:00 ~ 21:00	愛知県	Aichi (Nagoya)	0.039
24	3/19 20:00 ~ 21:00	三重県	Mie (Yokkaichi)	0.046
25	3/19 20:00 ~ 21:00	滋賀県	Shiga (Ohtsu)	0.033
26	3/19 20:00 ~ 21:00	京都府	Kyoto (Kyoto)	0.038
27	3/19 20:00 ~ 21:00	大阪府	Osaka (Osaka)	0.042
28	3/19 20:00 ~ 21:00	兵庫県	Hyogo (Kobe)	0.037
29	3/19 20:00 ~ 21:00	奈良県	Nara (Nara)	0.047
30	3/19 20:00 ~ 21:00	和歌山県	Wakayama (Wakaya	0.031
31	3/19 20:00 ~ 21:00	鳥取県	Tottori (Touhaku-g	0.063
32	3/19 20:00 ~ 21:00	島根県	Shimane (Matsue)	0.036
33	3/19 20:00 ~ 21:00	岡山県	Okayama (Okayama	0.048
34	3/19 20:00 ~ 21:00	広島県	Hiroshima (Hiroshin	0.047
35	3/19 20:00 ~ 21:00	山口県	Yamaguchi (Yamagu	0.093
36	3/19 20:00 ~ 21:00	徳島県	Tokushima (Tokush	0.038
37	3/19 20:00 ~ 21:00	香川県	Kagawa (Takamatsu	0.052
38	3/19 20:00 ~ 21:00	愛媛県	Ehime (Matsuyama)	0.048
39	3/19 20:00 ~ 21:00	高知県	Kochi (Kochi)	0.025
40	3/19 20:00 ~ 21:00	福岡県	Fukuoka (Dazaifu)	0.036
41	3/19 20:00 ~ 21:00	佐賀県	Saga (Saga)	0.039
42	3/19 20:00 ~ 21:00	長崎県	Nagasaki (Ohmura)	0.029
43	3/19 20:00 ~ 21:00	熊本県	Kumamoto (Uto)	0.027
44	3/19 20:00 ~ 21:00	大分県	Oita (Oita)	0.05
45	3/19 20:00 ~ 21:00	宮崎県	Miyazaki (Miyazaki)	0.026
46	3/19 20:00 ~ 21:00	鹿児島県	Kagoshima (Kagosh	0.034
47	3/19 20:00 ~ 21:00	沖縄県	Okinawa (Uruma)	0.021
1	3/19 21:00 ~ 22:00	北海道	Hokkaido (Sapporo)	0.028
2	3/19 21:00 ~ 22:00	青森県	Aomori (Aomori)	0.021
3	3/19 21:00 ~ 22:00	岩手県	Iwate (Morioka)	0.026
4	3/19 21:00 ~ 22:00	宮城県	Miyagi (Sendai)	
5	3/19 21:00 ~ 22:00	秋田県	Akita (Akita)	0.035
6	3/19 21:00 ~ 22:00	山形県	Yamagata (Yamaga	0.04
7	3/19 21:00 ~ 22:00	福島県	Fukushima (Futaba-gun)	
8	3/19 21:00 ~ 22:00	茨城県	Ibaraki (Mito)	0.167
9	3/19 21:00 ~ 22:00	栃木県	Tochigi (Itsunomiya	0.146
10	3/19 21:00 ~ 22:00	群馬県	Gunma (Maebashi)	0.075
11	3/19 21:00 ~ 22:00	埼玉県	Saitama (Saitama)	0.055
12	3/19 21:00 ~ 22:00	千葉県	Chiba (Ichihara)	0.033
13	3/19 21:00 ~ 22:00	東京都	Tokyo (Shinjuku-ku	0.046
14	3/19 21:00 ~ 22:00	神奈川県	Kanagawa (Chigasa	0.048
15	3/19 21:00 ~ 22:00	新潟県	Niigata (Niigata)	0.046
16	3/19 21:00 ~ 22:00	富山県	Toyama (Imizu)	0.047
17	3/19 21:00 ~ 22:00	石川県	Ishikawa (Kanazawa	0.047
18	3/19 21:00 ~ 22:00	福井県	Fukui (Fukui)	0.045
19	3/19 21:00 ~ 22:00	山梨県	Yamanashi (Kofu)	0.044
20	3/19 21:00 ~ 22:00	長野県	Nagano (Nagano)	0.067
21	3/19 21:00 ~ 22:00	岐阜県	Gifu (Kakamigahara	0.061

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22	3/19 21:00 ~ 22:00	静岡県	Shizuoka (Shizuoka	0.037
23	3/19 21:00 ~ 22:00	愛知県	Aichi (Nagoya)	0.039
24	3/19 21:00 ~ 22:00	三重県	Mie (Yokkaichi)	0.046
25	3/19 21:00 ~ 22:00	滋賀県	Shiga (Ohtsu)	0.033
26	3/19 21:00 ~ 22:00	京都府	Kyoto (Kyoto)	0.038
27	3/19 21:00 ~ 22:00	大阪府	Osaka (Osaka)	0.042
28	3/19 21:00 ~ 22:00	兵庫県	Hyogo (Kobe)	0.038
29	3/19 21:00 ~ 22:00	奈良県	Nara (Nara)	0.047
30	3/19 21:00 ~ 22:00	和歌山県	Wakayama (Wakaya	0.032
31	3/19 21:00 ~ 22:00	鳥取県	Tottori (Touhaku-g	0.063
32	3/19 21:00 ~ 22:00	島根県	Shimane (Matsue)	0.036
33	3/19 21:00 ~ 22:00	岡山県	Okayama (Okayama	0.048
34	3/19 21:00 ~ 22:00	広島県	Hiroshima (Hiroshin	0.047
35	3/19 21:00 ~ 22:00	山口県	Yamaguchi (Yamagı	0.093
36	3/19 21:00 ~ 22:00	徳島県	Tokushima (Tokush	0.038
37	3/19 21:00 ~ 22:00	香川県	Kagawa (Takamatsı	0.052
38	3/19 21:00 ~ 22:00	愛媛県	Ehime (Matsuyama)	0.049
39	3/19 21:00 ~ 22:00	高知県	Kochi (Kochi)	0.025
40	3/19 21:00 ~ 22:00	福岡県	Fukuoka (Dazaifu)	0.036
41	3/19 21:00 ~ 22:00	佐賀県	Saga (Saga)	0.04
42	3/19 21:00 ~ 22:00	長崎県	Nagasaki (Ohmura)	0.029
43	3/19 21:00 ~ 22:00	熊本県	Kumamoto (Uto)	0.027
44	3/19 21:00 ~ 22:00	大分県	Oita (Oita)	0.05
45	3/19 21:00 ~ 22:00	宮崎県	Miyazaki (Miyazaki)	0.026
46	3/19 21:00 ~ 22:00	鹿児島県	Kagoshima (Kagosh	0.035
47	3/19 21:00 ~ 22:00	沖縄県	Okinawa (Uruma)	0.021
1	3/19 22:00 ~ 23:00	北海道	Hokkaido (Sapporo)	0.028
2	3/19 22:00 ~ 23:00	青森県	Aomori (Aomori)	0.021
3	3/19 22:00 ~ 23:00	岩手県	Iwate (Morioka)	0.027
4	3/19 22:00 ~ 23:00	宮城県	Miyagi (Sendai)	
5	3/19 22:00 ~ 23:00	秋田県	Akita (Akita)	0.035
6	3/19 22:00 ~ 23:00	山形県	Yamagata (Yamaga	0.04
7	3/19 22:00 ~ 23:00	福島県	Fukushima (Futaba-gun)	
8	3/19 22:00 ~ 23:00	茨城県	Ibaraki (Mito)	0.166
9	3/19 22:00 ~ 23:00	栃木県	Tochigi (Itsunomiya	0.146
10	3/19 22:00 ~ 23:00	群馬県	Gunma (Maebashi)	0.075
11	3/19 22:00 ~ 23:00	埼玉県	Saitama (Saitama)	0.055
12	3/19 22:00 ~ 23:00	千葉県	Chiba (Ichihara)	0.033
13	3/19 22:00 ~ 23:00	東京都	Tokyo (Shinjuku-ku	0.046
14	3/19 22:00 ~ 23:00	神奈川県	Kanagawa (Chigasa	0.048
15	3/19 22:00 ~ 23:00	新潟県	Niigata (Niigata)	0.046
16	3/19 22:00 ~ 23:00	富山県	Toyama (Imizu)	0.047
17	3/19 22:00 ~ 23:00	石川県	Ishikawa (Kanazawa	0.047
18	3/19 22:00 ~ 23:00	福井県	Fukui (Fukui)	0.046
19	3/19 22:00 ~ 23:00	山梨県	Yamanashi (Kofu)	0.044
20	3/19 22:00 ~ 23:00	長野県	Nagano (Nagano)	0.066
21	3/19 22:00 ~ 23:00	岐阜県	Gifu (Kakamigahara	0.061
22	3/19 22:00 ~ 23:00	静岡県	Shizuoka (Shizuoka	0.037
23	3/19 22:00 ~ 23:00	愛知県	Aichi (Nagoya)	0.04
24	3/19 22:00 ~ 23:00	三重県	Mie (Yokkaichi)	0.046
25	3/19 22:00 ~ 23:00	滋賀県	Shiga (Ohtsu)	0.034
26	3/19 22:00 ~ 23:00	京都府	Kyoto (Kyoto)	0.039
27	3/19 22:00 ~ 23:00	大阪府	Osaka (Osaka)	0.042
28	3/19 22:00 ~ 23:00	兵庫県	Hyogo (Kobe)	0.037
29	3/19 22:00 ~ 23:00	奈良県	Nara (Nara)	0.048
30	3/19 22:00 ~ 23:00	和歌山県	Wakayama (Wakaya	0.032
31	3/19 22:00 ~ 23:00	鳥取県	Tottori (Touhaku-g	0.063

32	3/19 22:00 ~ 23:00	島根県	Shimane (Matsue)	0.036
33	3/19 22:00 ~ 23:00	岡山県	Okayama (Okayama	0.048
34	3/19 22:00 ~ 23:00	広島県	Hiroshima (Hiroshin	0.047
35	3/19 22:00 ~ 23:00	山口県	Yamaguchi (Yamagı	0.094
36	3/19 22:00 ~ 23:00	徳島県	Tokushima (Tokush	0.038
37	3/19 22:00 ~ 23:00	香川県	Kagawa (Takamatsı	0.052
38	3/19 22:00 ~ 23:00	愛媛県	Ehime (Matsuyama	0.048
39	3/19 22:00 ~ 23:00	高知県	Kochi (Kochi)	0.026
40	3/19 22:00 ~ 23:00	福岡県	Fukuoka (Dazaifu)	0.036
41	3/19 22:00 ~ 23:00	佐賀県	Saga (Saga)	0.04
42	3/19 22:00 ~ 23:00	長崎県	Nagasaki (Ohmura)	0.029
43	3/19 22:00 ~ 23:00	熊本県	Kumamoto (Uto)	0.027
44	3/19 22:00 ~ 23:00	大分県	Oita (Oita)	0.05
45	3/19 22:00 ~ 23:00	宮崎県	Miyazaki (Miyazaki)	0.027
46	3/19 22:00 ~ 23:00	鹿児島県	Kagoshima (Kagosh	0.035
47	3/19 22:00 ~ 23:00	沖縄県	Okinawa (Uruma)	0.021
1	3/19 23:00 ~ 24:00	北海道	Hokkaido (Sapporo	0.028
2	3/19 23:00 ~ 24:00	青森県	Aomori (Aomori)	0.021
3	3/19 23:00 ~ 24:00	岩手県	Iwate (Morioka)	0.027
4	3/19 23:00 ~ 24:00	宮城県	Miyagi (Sendai)	
5	3/19 23:00 ~ 24:00	秋田県	Akita (Akita)	0.035
6	3/19 23:00 ~ 24:00	山形県	Yamagata (Yamaga	0.04
7	3/19 23:00 ~ 24:00	福島県	Fukushima (Futaba-gun)	
8	3/19 23:00 ~ 24:00	茨城県	Ibaraki (Mito)	0.166
9	3/19 23:00 ~ 24:00	栃木県	Tochigi (Itsunomiya	0.146
10	3/19 23:00 ~ 24:00	群馬県	Gunma (Maebashi)	0.075
11	3/19 23:00 ~ 24:00	埼玉県	Saitama (Saitama)	0.054
12	3/19 23:00 ~ 24:00	千葉県	Chiba (Ichihara)	0.033
13	3/19 23:00 ~ 24:00	東京都	Tokyo (Shinjuku-ku	0.046
14	3/19 23:00 ~ 24:00	神奈川県	Kanagawa (Chigasa	0.048
15	3/19 23:00 ~ 24:00	新潟県	Niigata (Niigata)	0.046
16	3/19 23:00 ~ 24:00	富山県	Toyama (Imizu)	0.047
17	3/19 23:00 ~ 24:00	石川県	Ishikawa (Kanazawa	0.047
18	3/19 23:00 ~ 24:00	福井県	Fukui (Fukui)	0.045
19	3/19 23:00 ~ 24:00	山梨県	Yamanashi (Kofu)	0.044
20	3/19 23:00 ~ 24:00	長野県	Nagano (Nagano)	0.067
21	3/19 23:00 ~ 24:00	岐阜県	Gifu (Kakamigahara	0.061
22	3/19 23:00 ~ 24:00	静岡県	Shizuoka (Shizuoka	0.037
23	3/19 23:00 ~ 24:00	愛知県	Aichi (Nagoya)	0.04
24	3/19 23:00 ~ 24:00	三重県	Mie (Yokkaichi)	0.046
25	3/19 23:00 ~ 24:00	滋賀県	Shiga (Ohtsu)	0.035
26	3/19 23:00 ~ 24:00	京都府	Kyoto (Kyoto)	0.039
27	3/19 23:00 ~ 24:00	大阪府	Osaka (Osaka)	0.043
28	3/19 23:00 ~ 24:00	兵庫県	Hyogo (Kobe)	0.037
29	3/19 23:00 ~ 24:00	奈良県	Nara (Nara)	0.048
30	3/19 23:00 ~ 24:00	和歌山県	Wakayama (Wakaya	0.032
31	3/19 23:00 ~ 24:00	鳥取県	Tottori (Touhaku-g	0.063
32	3/19 23:00 ~ 24:00	島根県	Shimane (Matsue)	0.037
33	3/19 23:00 ~ 24:00	岡山県	Okayama (Okayama	0.049
34	3/19 23:00 ~ 24:00	広島県	Hiroshima (Hiroshin	0.048
35	3/19 23:00 ~ 24:00	山口県	Yamaguchi (Yamagı	0.094
36	3/19 23:00 ~ 24:00	徳島県	Tokushima (Tokush	0.039
37	3/19 23:00 ~ 24:00	香川県	Kagawa (Takamatsı	0.053
38	3/19 23:00 ~ 24:00	愛媛県	Ehime (Matsuyama	0.049
39	3/19 23:00 ~ 24:00	高知県	Kochi (Kochi)	0.026
40	3/19 23:00 ~ 24:00	福岡県	Fukuoka (Dazaifu)	0.036
41	3/19 23:00 ~ 24:00	佐賀県	Saga (Saga)	0.04

42	3/19 23:00 ~ 24:00	長崎県	Nagasaki (Ohmura)	0.028
43	3/19 23:00 ~ 24:00	熊本県	Kumamoto (Uto)	0.027
44	3/19 23:00 ~ 24:00	大分県	Oita (Oita)	0.05
45	3/19 23:00 ~ 24:00	宮崎県	Miyazaki (Miyazaki)	0.027
46	3/19 23:00 ~ 24:00	鹿児島県	Kagoshima (Kagosh	0.035
47	3/19 23:00 ~ 24:00	沖縄県	Okinawa (Uruma)	0.021
1	3/20 00:00 ~ 01:00	北海道	Hokkaido (Sapporo)	0.028
2	3/20 00:00 ~ 01:00	青森県	Aomori (Aomori)	0.021
3	3/20 00:00 ~ 01:00	岩手県	Iwate (Morioka)	0.026
4	3/20 00:00 ~ 01:00	宮城県	Miyagi (Sendai)	
5	3/20 00:00 ~ 01:00	秋田県	Akita (Akita)	0.035
6	3/20 00:00 ~ 01:00	山形県	Yamagata (Yamaga	0.04
7	3/20 00:00 ~ 01:00	福島県	Fukushima (Futaba-gun)	
8	3/20 00:00 ~ 01:00	茨城県	Ibaraki (Mito)	0.166
9	3/20 00:00 ~ 01:00	栃木県	Tochigi (Itsunomiya	0.145
10	3/20 00:00 ~ 01:00	群馬県	Gunma (Maebashi)	0.074
11	3/20 00:00 ~ 01:00	埼玉県	Saitama (Saitama)	0.055
12	3/20 00:00 ~ 01:00	千葉県	Chiba (Ichihara)	0.033
13	3/20 00:00 ~ 01:00	東京都	Tokyo (Shinjuku-ku	0.046
14	3/20 00:00 ~ 01:00	神奈川県	Kanagawa (Chigasa	0.048
15	3/20 00:00 ~ 01:00	新潟県	Niigata (Niigata)	0.046
16	3/20 00:00 ~ 01:00	富山県	Toyama (Imizu)	0.048
17	3/20 00:00 ~ 01:00	石川県	Ishikawa (Kanazawa	0.047
18	3/20 00:00 ~ 01:00	福井県	Fukui (Fukui)	0.046
19	3/20 00:00 ~ 01:00	山梨県	Yamanashi (Kofu)	0.044
20	3/20 00:00 ~ 01:00	長野県	Nagano (Nagano)	0.067
21	3/20 00:00 ~ 01:00	岐阜県	Gifu (Kakamigahara	0.061
22	3/20 00:00 ~ 01:00	静岡県	Shizuoka (Shizuoka	0.036
23	3/20 00:00 ~ 01:00	愛知県	Aichi (Nagoya)	0.04
24	3/20 00:00 ~ 01:00	三重県	Mie (Yokkaichi)	0.046
25	3/20 00:00 ~ 01:00	滋賀県	Shiga (Ohtsu)	0.035
26	3/20 00:00 ~ 01:00	京都府	Kyoto (Kyoto)	0.038
27	3/20 00:00 ~ 01:00	大阪府	Osaka (Osaka)	0.043
28	3/20 00:00 ~ 01:00	兵庫県	Hyogo (Kobe)	0.038
29	3/20 00:00 ~ 01:00	奈良県	Nara (Nara)	0.048
30	3/20 00:00 ~ 01:00	和歌山県	Wakayama (Wakaya	0.032
31	3/20 00:00 ~ 01:00	鳥取県	Tottori (Touhaku-g	0.063
32	3/20 00:00 ~ 01:00	島根県	Shimane (Matsue)	0.037
33	3/20 00:00 ~ 01:00	岡山県	Okayama (Okayama	0.05
34	3/20 00:00 ~ 01:00	広島県	Hiroshima (Hiroshin	0.049
35	3/20 00:00 ~ 01:00	山口県	Yamaguchi (Yamagu	0.095
36	3/20 00:00 ~ 01:00	徳島県	Tokushima (Tokush	0.038
37	3/20 00:00 ~ 01:00	香川県	Kagawa (Takamatsu	0.054
38	3/20 00:00 ~ 01:00	愛媛県	Ehime (Matsuyama)	0.049
39	3/20 00:00 ~ 01:00	高知県	Kochi (Kochi)	0.026
40	3/20 00:00 ~ 01:00	福岡県	Fukuoka (Dazaifu)	0.036
41	3/20 00:00 ~ 01:00	佐賀県	Saga (Saga)	0.04
42	3/20 00:00 ~ 01:00	長崎県	Nagasaki (Ohmura)	0.029
43	3/20 00:00 ~ 01:00	熊本県	Kumamoto (Uto)	0.028
44	3/20 00:00 ~ 01:00	大分県	Oita (Oita)	0.05
45	3/20 00:00 ~ 01:00	宮崎県	Miyazaki (Miyazaki)	0.027
46	3/20 00:00 ~ 01:00	鹿児島県	Kagoshima (Kagosh	0.035
47	3/20 00:00 ~ 01:00	沖縄県	Okinawa (Uruma)	0.021
1	3/20 01:00 ~ 02:00	北海道	Hokkaido (Sapporo)	0.028
2	3/20 01:00 ~ 02:00	青森県	Aomori (Aomori)	0.021
3	3/20 01:00 ~ 02:00	岩手県	Iwate (Morioka)	0.027
4	3/20 01:00 ~ 02:00	宮城県	Miyagi (Sendai)	

5	3/20 01:00 ~ 02:00	秋田県	Akita (Akita)	0.035
6	3/20 01:00 ~ 02:00	山形県	Yamagata (Yamaga	0.04
7	3/20 01:00 ~ 02:00	福島県	Fukushima (Futaba-gun)	
8	3/20 01:00 ~ 02:00	茨城県	Ibaraki (Mito)	0.165
9	3/20 01:00 ~ 02:00	栃木県	Tochigi (Itsunomiya	0.145
10	3/20 01:00 ~ 02:00	群馬県	Gunma (Maebashi)	0.074
11	3/20 01:00 ~ 02:00	埼玉県	Saitama (Saitama)	0.055
12	3/20 01:00 ~ 02:00	千葉県	Chiba (Ichihara)	0.033
13	3/20 01:00 ~ 02:00	東京都	Tokyo (Shinjuku-ku	0.046
14	3/20 01:00 ~ 02:00	神奈川県	Kanagawa (Chigasa	0.048
15	3/20 01:00 ~ 02:00	新潟県	Niigata (Niigata)	0.046
16	3/20 01:00 ~ 02:00	富山県	Toyama (Imizu)	0.048
17	3/20 01:00 ~ 02:00	石川県	Ishikawa (Kanazawa	0.047
18	3/20 01:00 ~ 02:00	福井県	Fukui (Fukui)	0.046
19	3/20 01:00 ~ 02:00	山梨県	Yamanashi (Kofu)	0.045
20	3/20 01:00 ~ 02:00	長野県	Nagano (Nagano)	0.067
21	3/20 01:00 ~ 02:00	岐阜県	Gifu (Kakamigahara	0.061
22	3/20 01:00 ~ 02:00	静岡県	Shizuoka (Shizuoka	0.036
23	3/20 01:00 ~ 02:00	愛知県	Aichi (Nagoya)	0.041
24	3/20 01:00 ~ 02:00	三重県	Mie (Yokkaichi)	0.046
25	3/20 01:00 ~ 02:00	滋賀県	Shiga (Ohtsu)	0.036
26	3/20 01:00 ~ 02:00	京都府	Kyoto (Kyoto)	0.038
27	3/20 01:00 ~ 02:00	大阪府	Osaka (Osaka)	0.043
28	3/20 01:00 ~ 02:00	兵庫県	Hyogo (Kobe)	0.038
29	3/20 01:00 ~ 02:00	奈良県	Nara (Nara)	0.048
30	3/20 01:00 ~ 02:00	和歌山県	Wakayama (Wakaya	0.032
31	3/20 01:00 ~ 02:00	鳥取県	Tottori (Touhaku-g	0.064
32	3/20 01:00 ~ 02:00	島根県	Shimane (Matsue)	0.037
33	3/20 01:00 ~ 02:00	岡山県	Okayama (Okayama	0.05
34	3/20 01:00 ~ 02:00	広島県	Hiroshima (Hiroshin	0.05
35	3/20 01:00 ~ 02:00	山口県	Yamaguchi (Yamagu	0.096
36	3/20 01:00 ~ 02:00	徳島県	Tokushima (Tokush	0.039
37	3/20 01:00 ~ 02:00	香川県	Kagawa (Takamatsu	0.054
38	3/20 01:00 ~ 02:00	愛媛県	Ehime (Matsuyama)	0.049
39	3/20 01:00 ~ 02:00	高知県	Kochi (Kochi)	0.026
40	3/20 01:00 ~ 02:00	福岡県	Fukuoka (Dazaifu)	0.036
41	3/20 01:00 ~ 02:00	佐賀県	Saga (Saga)	0.04
42	3/20 01:00 ~ 02:00	長崎県	Nagasaki (Ohmura)	0.028
43	3/20 01:00 ~ 02:00	熊本県	Kumamoto (Uto)	0.028
44	3/20 01:00 ~ 02:00	大分県	Oita (Oita)	0.05
45	3/20 01:00 ~ 02:00	宮崎県	Miyazaki (Miyazaki)	0.026
46	3/20 01:00 ~ 02:00	鹿児島県	Kagoshima (Kagosh	0.035
47	3/20 01:00 ~ 02:00	沖縄県	Okinawa (Uruma)	0.021
1	3/20 02:00 ~ 03:00	北海道	Hokkaido (Sapporo)	0.028
2	3/20 02:00 ~ 03:00	青森県	Aomori (Aomori)	0.021
3	3/20 02:00 ~ 03:00	岩手県	Iwate (Morioka)	0.027
4	3/20 02:00 ~ 03:00	宮城県	Miyagi (Sendai)	
5	3/20 02:00 ~ 03:00	秋田県	Akita (Akita)	0.035
6	3/20 02:00 ~ 03:00	山形県	Yamagata (Yamaga	0.04
7	3/20 02:00 ~ 03:00	福島県	Fukushima (Futaba-gun)	
8	3/20 02:00 ~ 03:00	茨城県	Ibaraki (Mito)	0.164
9	3/20 02:00 ~ 03:00	栃木県	Tochigi (Itsunomiya	0.145
10	3/20 02:00 ~ 03:00	群馬県	Gunma (Maebashi)	0.074
11	3/20 02:00 ~ 03:00	埼玉県	Saitama (Saitama)	0.055
12	3/20 02:00 ~ 03:00	千葉県	Chiba (Ichihara)	0.033
13	3/20 02:00 ~ 03:00	東京都	Tokyo (Shinjuku-ku	0.046
14	3/20 02:00 ~ 03:00	神奈川県	Kanagawa (Chigasa	0.048

15	3/20 02:00 ~ 03:00	新潟県	Niigata (Niigata)	0.047
16	3/20 02:00 ~ 03:00	富山県	Toyama (Imizu)	0.048
17	3/20 02:00 ~ 03:00	石川県	Ishikawa (Kanazawa	0.047
18	3/20 02:00 ~ 03:00	福井県	Fukui (Fukui)	0.046
19	3/20 02:00 ~ 03:00	山梨県	Yamanashi (Kofu)	0.044
20	3/20 02:00 ~ 03:00	長野県	Nagano (Nagano)	0.067
21	3/20 02:00 ~ 03:00	岐阜県	Gifu (Kakamigahara	0.061
22	3/20 02:00 ~ 03:00	静岡県	Shizuoka (Shizuoka	0.037
23	3/20 02:00 ~ 03:00	愛知県	Aichi (Nagoya)	0.041
24	3/20 02:00 ~ 03:00	三重県	Mie (Yokkaichi)	0.046
25	3/20 02:00 ~ 03:00	滋賀県	Shiga (Ohtsu)	0.036
26	3/20 02:00 ~ 03:00	京都府	Kyoto (Kyoto)	0.039
27	3/20 02:00 ~ 03:00	大阪府	Osaka (Osaka)	0.043
28	3/20 02:00 ~ 03:00	兵庫県	Hyogo (Kobe)	0.038
29	3/20 02:00 ~ 03:00	奈良県	Nara (Nara)	0.048
30	3/20 02:00 ~ 03:00	和歌山県	Wakayama (Wakaya	0.033
31	3/20 02:00 ~ 03:00	鳥取県	Tottori (Touhaku-g	0.064
32	3/20 02:00 ~ 03:00	島根県	Shimane (Matsue)	0.037
33	3/20 02:00 ~ 03:00	岡山県	Okayama (Okayama	0.051
34	3/20 02:00 ~ 03:00	広島県	Hiroshima (Hiroshin	0.05
35	3/20 02:00 ~ 03:00	山口県	Yamaguchi (Yamagı	0.095
36	3/20 02:00 ~ 03:00	徳島県	Tokushima (Tokush	0.039
37	3/20 02:00 ~ 03:00	香川県	Kagawa (Takamatsı	0.054
38	3/20 02:00 ~ 03:00	愛媛県	Ehime (Matsuyama)	0.049
39	3/20 02:00 ~ 03:00	高知県	Kochi (Kochi)	0.026
40	3/20 02:00 ~ 03:00	福岡県	Fukuoka (Dazaifu)	0.037
41	3/20 02:00 ~ 03:00	佐賀県	Saga (Saga)	0.041
42	3/20 02:00 ~ 03:00	長崎県	Nagasaki (Ohmura)	0.028
43	3/20 02:00 ~ 03:00	熊本県	Kumamoto (Uto)	0.028
44	3/20 02:00 ~ 03:00	大分県	Oita (Oita)	0.051
45	3/20 02:00 ~ 03:00	宮崎県	Miyazaki (Miyazaki)	0.026
46	3/20 02:00 ~ 03:00	鹿児島県	Kagoshima (Kagosh	0.035
47	3/20 02:00 ~ 03:00	沖縄県	Okinawa (Uruma)	0.021
1	3/20 03:00 ~ 04:00	北海道	Hokkaido (Sapporo)	0.028
2	3/20 03:00 ~ 04:00	青森県	Aomori (Aomori)	0.021
3	3/20 03:00 ~ 04:00	岩手県	Iwate (Morioka)	0.026
4	3/20 03:00 ~ 04:00	宮城県	Miyagi (Sendai)	
5	3/20 03:00 ~ 04:00	秋田県	Akita (Akita)	0.035
6	3/20 03:00 ~ 04:00	山形県	Yamagata (Yamaga	0.041
7	3/20 03:00 ~ 04:00	福島県	Fukushima (Futaba-gun)	
8	3/20 03:00 ~ 04:00	茨城県	Ibaraki (Mito)	0.164
9	3/20 03:00 ~ 04:00	栃木県	Tochigi (Itsunomiya	0.144
10	3/20 03:00 ~ 04:00	群馬県	Gunma (Maebashi)	0.074
11	3/20 03:00 ~ 04:00	埼玉県	Saitama (Saitama)	0.054
12	3/20 03:00 ~ 04:00	千葉県	Chiba (Ichihara)	0.033
13	3/20 03:00 ~ 04:00	東京都	Tokyo (Shinjuku-kı	0.046
14	3/20 03:00 ~ 04:00	神奈川県	Kanagawa (Chigasa	0.048
15	3/20 03:00 ~ 04:00	新潟県	Niigata (Niigata)	0.047
16	3/20 03:00 ~ 04:00	富山県	Toyama (Imizu)	0.048
17	3/20 03:00 ~ 04:00	石川県	Ishikawa (Kanazawa	0.047
18	3/20 03:00 ~ 04:00	福井県	Fukui (Fukui)	0.046
19	3/20 03:00 ~ 04:00	山梨県	Yamanashi (Kofu)	0.045
20	3/20 03:00 ~ 04:00	長野県	Nagano (Nagano)	0.067
21	3/20 03:00 ~ 04:00	岐阜県	Gifu (Kakamigahara	0.061
22	3/20 03:00 ~ 04:00	静岡県	Shizuoka (Shizuoka	0.036
23	3/20 03:00 ~ 04:00	愛知県	Aichi (Nagoya)	0.041
24	3/20 03:00 ~ 04:00	三重県	Mie (Yokkaichi)	0.046

25	3/20 03:00 ˜ 04:00	滋賀県	Shiga (Ohtsu)	0.036
26	3/20 03:00 ˜ 04:00	京都府	Kyoto (Kyoto)	0.039
27	3/20 03:00 ˜ 04:00	大阪府	Osaka (Osaka)	0.043
28	3/20 03:00 ˜ 04:00	兵庫県	Hyogo (Kobe)	0.038
29	3/20 03:00 ˜ 04:00	奈良県	Nara (Nara)	0.049
30	3/20 03:00 ˜ 04:00	和歌山県	Wakayama (Wakaya	0.033
31	3/20 03:00 ˜ 04:00	鳥取県	Tottori (Touhaku-g	0.064
32	3/20 03:00 ˜ 04:00	島根県	Shimane (Matsue)	0.037
33	3/20 03:00 ˜ 04:00	岡山県	Okayama (Okayama	0.051
34	3/20 03:00 ˜ 04:00	広島県	Hiroshima (Hiroshin	0.05
35	3/20 03:00 ˜ 04:00	山口県	Yamaguchi (Yamagı	0.096
36	3/20 03:00 ˜ 04:00	徳島県	Tokushima (Tokush	0.039
37	3/20 03:00 ˜ 04:00	香川県	Kagawa (Takamatsı	0.054
38	3/20 03:00 ˜ 04:00	愛媛県	Ehime (Matsuyama	0.049
39	3/20 03:00 ˜ 04:00	高知県	Kochi (Kochi)	0.027
40	3/20 03:00 ˜ 04:00	福岡県	Fukuoka (Dazaifu)	0.037
41	3/20 03:00 ˜ 04:00	佐賀県	Saga (Saga)	0.041
42	3/20 03:00 ˜ 04:00	長崎県	Nagasaki (Ohmura)	0.029
43	3/20 03:00 ˜ 04:00	熊本県	Kumamoto (Uto)	0.028
44	3/20 03:00 ˜ 04:00	大分県	Oita (Oita)	0.05
45	3/20 03:00 ˜ 04:00	宮崎県	Miyazaki (Miyazaki)	0.027
46	3/20 03:00 ˜ 04:00	鹿児島県	Kagoshima (Kagosh	0.035
47	3/20 03:00 ˜ 04:00	沖縄県	Okinawa (Uruma)	0.021
1	3/20 04:00 ˜ 05:00	北海道	Hokkaido (Sapporo	0.028
2	3/20 04:00 ˜ 05:00	青森県	Aomori (Aomori)	0.021
3	3/20 04:00 ˜ 05:00	岩手県	Iwate (Morioka)	0.027
4	3/20 04:00 ˜ 05:00	宮城県	Miyagi (Sendai)	
5	3/20 04:00 ˜ 05:00	秋田県	Akita (Akita)	0.035
6	3/20 04:00 ˜ 05:00	山形県	Yamagata (Yamaga	0.041
7	3/20 04:00 ˜ 05:00	福島県	Fukushima (Futaba-gun)	
8	3/20 04:00 ˜ 05:00	茨城県	Ibaraki (Mito)	0.164
9	3/20 04:00 ˜ 05:00	栃木県	Tochigi (Itsunomiya	0.144
10	3/20 04:00 ˜ 05:00	群馬県	Gunma (Maebashi)	0.074
11	3/20 04:00 ˜ 05:00	埼玉県	Saitama (Saitama)	0.054
12	3/20 04:00 ˜ 05:00	千葉県	Chiba (Ichihara)	0.034
13	3/20 04:00 ˜ 05:00	東京都	Tokyo (Shinjuku-kı	0.046
14	3/20 04:00 ˜ 05:00	神奈川県	Kanagawa (Chigasa	0.048
15	3/20 04:00 ˜ 05:00	新潟県	Niigata (Niigata)	0.047
16	3/20 04:00 ˜ 05:00	富山県	Toyama (Imizu)	0.049
17	3/20 04:00 ˜ 05:00	石川県	Ishikawa (Kanazawa	0.047
18	3/20 04:00 ˜ 05:00	福井県	Fukui (Fukui)	0.046
19	3/20 04:00 ˜ 05:00	山梨県	Yamanashi (Kofu)	0.045
20	3/20 04:00 ˜ 05:00	長野県	Nagano (Nagano)	0.066
21	3/20 04:00 ˜ 05:00	岐阜県	Gifu (Kakamigahara	0.062
22	3/20 04:00 ˜ 05:00	静岡県	Shizuoka (Shizuoka	0.037
23	3/20 04:00 ˜ 05:00	愛知県	Aichi (Nagoya)	0.041
24	3/20 04:00 ˜ 05:00	三重県	Mie (Yokkaichi)	0.046
25	3/20 04:00 ˜ 05:00	滋賀県	Shiga (Ohtsu)	0.037
26	3/20 04:00 ˜ 05:00	京都府	Kyoto (Kyoto)	0.039
27	3/20 04:00 ˜ 05:00	大阪府	Osaka (Osaka)	0.043
28	3/20 04:00 ˜ 05:00	兵庫県	Hyogo (Kobe)	0.038
29	3/20 04:00 ˜ 05:00	奈良県	Nara (Nara)	0.049
30	3/20 04:00 ˜ 05:00	和歌山県	Wakayama (Wakaya	0.033
31	3/20 04:00 ˜ 05:00	鳥取県	Tottori (Touhaku-g	0.064
32	3/20 04:00 ˜ 05:00	島根県	Shimane (Matsue)	0.038
33	3/20 04:00 ˜ 05:00	岡山県	Okayama (Okayama	0.051
34	3/20 04:00 ˜ 05:00	広島県	Hiroshima (Hiroshin	0.05

35	3/20 04:00 ˜ 05:00	山口県	Yamaguchi (Yamagı	0.096
36	3/20 04:00 ˜ 05:00	徳島県	Tokushima (Tokush	0.039
37	3/20 04:00 ˜ 05:00	香川県	Kagawa (Takamatsı	0.054
38	3/20 04:00 ˜ 05:00	愛媛県	Ehime (Matsuyama.	0.049
39	3/20 04:00 ˜ 05:00	高知県	Kochi (Kochi)	0.026
40	3/20 04:00 ˜ 05:00	福岡県	Fukuoka (Dazaifu)	0.037
41	3/20 04:00 ˜ 05:00	佐賀県	Saga (Saga)	0.041
42	3/20 04:00 ˜ 05:00	長崎県	Nagasaki (Ohmura)	0.028
43	3/20 04:00 ˜ 05:00	熊本県	Kumamoto (Uto)	0.028
44	3/20 04:00 ˜ 05:00	大分県	Oita (Oita)	0.051
45	3/20 04:00 ˜ 05:00	宮崎県	Miyazaki (Miyazaki)	0.027
46	3/20 04:00 ˜ 05:00	鹿児島県	Kagoshima (Kagosh	0.035
47	3/20 04:00 ˜ 05:00	沖縄県	Okinawa (Uruma)	0.021
1	3/20 05:00 ˜ 06:00	北海道	Hokkaido (Sapporo.	0.028
2	3/20 05:00 ˜ 06:00	青森県	Aomori (Aomori)	0.021
3	3/20 05:00 ˜ 06:00	岩手県	Iwate (Morioka)	0.027
4	3/20 05:00 ˜ 06:00	宮城県	Miyagi (Sendai)	
5	3/20 05:00 ˜ 06:00	秋田県	Akita (Akita)	0.035
6	3/20 05:00 ˜ 06:00	山形県	Yamagata (Yamaga	0.041
7	3/20 05:00 ˜ 06:00	福島県	Fukushima (Futaba-gun)	
8	3/20 05:00 ˜ 06:00	茨城県	Ibaraki (Mito)	0.163
9	3/20 05:00 ˜ 06:00	栃木県	Tochigi (Itsunomiya	0.143
10	3/20 05:00 ˜ 06:00	群馬県	Gunma (Maebashi)	0.073
11	3/20 05:00 ˜ 06:00	埼玉県	Saitama (Saitama)	0.054
12	3/20 05:00 ˜ 06:00	千葉県	Chiba (Ichihara)	0.034
13	3/20 05:00 ˜ 06:00	東京都	Tokyo (Shinjuku-kı	0.046
14	3/20 05:00 ˜ 06:00	神奈川県	Kanagawa (Chigasa	0.048
15	3/20 05:00 ˜ 06:00	新潟県	Niigata (Niigata)	0.047
16	3/20 05:00 ˜ 06:00	富山県	Toyama (Imizu)	0.048
17	3/20 05:00 ˜ 06:00	石川県	Ishikawa (Kanazawa	0.047
18	3/20 05:00 ˜ 06:00	福井県	Fukui (Fukui)	0.046
19	3/20 05:00 ˜ 06:00	山梨県	Yamanashi (Kofu)	0.045
20	3/20 05:00 ˜ 06:00	長野県	Nagano (Nagano)	0.066
21	3/20 05:00 ˜ 06:00	岐阜県	Gifu (Kakamigahara	0.062
22	3/20 05:00 ˜ 06:00	静岡県	Shizuoka (Shizuoka	0.037
23	3/20 05:00 ˜ 06:00	愛知県	Aichi (Nagoya)	0.042
24	3/20 05:00 ˜ 06:00	三重県	Mie (Yokkaichi)	0.046
25	3/20 05:00 ˜ 06:00	滋賀県	Shiga (Ohtsu)	0.037
26	3/20 05:00 ˜ 06:00	京都府	Kyoto (Kyoto)	0.04
27	3/20 05:00 ˜ 06:00	大阪府	Osaka (Osaka)	0.043
28	3/20 05:00 ˜ 06:00	兵庫県	Hyogo (Kobe)	0.039
29	3/20 05:00 ˜ 06:00	奈良県	Nara (Nara)	0.049
30	3/20 05:00 ˜ 06:00	和歌山県	Wakayama (Wakaya	0.033
31	3/20 05:00 ˜ 06:00	鳥取県	Tottori (Touhaku-g	0.064
32	3/20 05:00 ˜ 06:00	島根県	Shimane (Matsue)	0.038
33	3/20 05:00 ˜ 06:00	岡山県	Okayama (Okayama	0.052
34	3/20 05:00 ˜ 06:00	広島県	Hiroshima (Hiroshin	0.05
35	3/20 05:00 ˜ 06:00	山口県	Yamaguchi (Yamagı	0.096
36	3/20 05:00 ˜ 06:00	徳島県	Tokushima (Tokush	0.039
37	3/20 05:00 ˜ 06:00	香川県	Kagawa (Takamatsı	0.054
38	3/20 05:00 ˜ 06:00	愛媛県	Ehime (Matsuyama.	0.05
39	3/20 05:00 ˜ 06:00	高知県	Kochi (Kochi)	0.027
40	3/20 05:00 ˜ 06:00	福岡県	Fukuoka (Dazaifu)	0.037
41	3/20 05:00 ˜ 06:00	佐賀県	Saga (Saga)	0.041
42	3/20 05:00 ˜ 06:00	長崎県	Nagasaki (Ohmura)	0.029
43	3/20 05:00 ˜ 06:00	熊本県	Kumamoto (Uto)	0.028
44	3/20 05:00 ˜ 06:00	大分県	Oita (Oita)	0.051

45	3/20 05:00 ~ 06:00	宮崎県	Miyazaki (Miyazaki)	0.026
46	3/20 05:00 ~ 06:00	鹿児島県	Kagoshima (Kagosh	0.035
47	3/20 05:00 ~ 06:00	沖縄県	Okinawa (Uruma)	0.021
1	3/20 06:00 ~ 07:00	北海道	Hokkaido (Sapporo)	0.028
2	3/20 06:00 ~ 07:00	青森県	Aomori (Aomori)	0.021
3	3/20 06:00 ~ 07:00	岩手県	Iwate (Morioka)	0.027
4	3/20 06:00 ~ 07:00	宮城県	Miyagi (Sendai)	
5	3/20 06:00 ~ 07:00	秋田県	Akita (Akita)	0.035
6	3/20 06:00 ~ 07:00	山形県	Yamagata (Yamaga	0.041
7	3/20 06:00 ~ 07:00	福島県	Fukushima (Futaba-gun)	
8	3/20 06:00 ~ 07:00	茨城県	Ibaraki (Mito)	0.163
9	3/20 06:00 ~ 07:00	栃木県	Tochigi (Itsunomiya	0.142
10	3/20 06:00 ~ 07:00	群馬県	Gunma (Maebashi)	0.073
11	3/20 06:00 ~ 07:00	埼玉県	Saitama (Saitama)	0.054
12	3/20 06:00 ~ 07:00	千葉県	Chiba (Ichihara)	0.034
13	3/20 06:00 ~ 07:00	東京都	Tokyo (Shinjuku-ku	0.046
14	3/20 06:00 ~ 07:00	神奈川県	Kanagawa (Chigasa	0.048
15	3/20 06:00 ~ 07:00	新潟県	Niigata (Niigata)	0.047
16	3/20 06:00 ~ 07:00	富山県	Toyama (Imizu)	0.049
17	3/20 06:00 ~ 07:00	石川県	Ishikawa (Kanazawa	0.048
18	3/20 06:00 ~ 07:00	福井県	Fukui (Fukui)	0.046
19	3/20 06:00 ~ 07:00	山梨県	Yamanashi (Kofu)	0.045
20	3/20 06:00 ~ 07:00	長野県	Nagano (Nagano)	0.067
21	3/20 06:00 ~ 07:00	岐阜県	Gifu (Kakamigahara	0.062
22	3/20 06:00 ~ 07:00	静岡県	Shizuoka (Shizuoka	0.037
23	3/20 06:00 ~ 07:00	愛知県	Aichi (Nagoya)	0.042
24	3/20 06:00 ~ 07:00	三重県	Mie (Yokkaichi)	0.046
25	3/20 06:00 ~ 07:00	滋賀県	Shiga (Ohtsu)	0.038
26	3/20 06:00 ~ 07:00	京都府	Kyoto (Kyoto)	0.04
27	3/20 06:00 ~ 07:00	大阪府	Osaka (Osaka)	0.043
28	3/20 06:00 ~ 07:00	兵庫県	Hyogo (Kobe)	0.039
29	3/20 06:00 ~ 07:00	奈良県	Nara (Nara)	0.049
30	3/20 06:00 ~ 07:00	和歌山県	Wakayama (Wakaya	0.033
31	3/20 06:00 ~ 07:00	鳥取県	Tottori (Touhaku-g	0.063
32	3/20 06:00 ~ 07:00	島根県	Shimane (Matsue)	0.038
33	3/20 06:00 ~ 07:00	岡山県	Okayama (Okayama	0.052
34	3/20 06:00 ~ 07:00	広島県	Hiroshima (Hiroshin	0.051
35	3/20 06:00 ~ 07:00	山口県	Yamaguchi (Yamagu	0.096
36	3/20 06:00 ~ 07:00	徳島県	Tokushima (Tokush	0.039
37	3/20 06:00 ~ 07:00	香川県	Kagawa (Takamatsu	0.054
38	3/20 06:00 ~ 07:00	愛媛県	Ehime (Matsuyama)	0.05
39	3/20 06:00 ~ 07:00	高知県	Kochi (Kochi)	0.027
40	3/20 06:00 ~ 07:00	福岡県	Fukuoka (Dazaifu)	0.037
41	3/20 06:00 ~ 07:00	佐賀県	Saga (Saga)	0.041
42	3/20 06:00 ~ 07:00	長崎県	Nagasaki (Ohmura)	0.029
43	3/20 06:00 ~ 07:00	熊本県	Kumamoto (Uto)	0.028
44	3/20 06:00 ~ 07:00	大分県	Oita (Oita)	0.051
45	3/20 06:00 ~ 07:00	宮崎県	Miyazaki (Miyazaki)	0.026
46	3/20 06:00 ~ 07:00	鹿児島県	Kagoshima (Kagosh	0.035
47	3/20 06:00 ~ 07:00	沖縄県	Okinawa (Uruma)	0.021
1	3/20 07:00 ~ 08:00	北海道	Hokkaido (Sapporo)	0.028
2	3/20 07:00 ~ 08:00	青森県	Aomori (Aomori)	0.021
3	3/20 07:00 ~ 08:00	岩手県	Iwate (Morioka)	0.027
4	3/20 07:00 ~ 08:00	宮城県	Miyagi (Sendai)	
5	3/20 07:00 ~ 08:00	秋田県	Akita (Akita)	0.035
6	3/20 07:00 ~ 08:00	山形県	Yamagata (Yamaga	0.04
7	3/20 07:00 ~ 08:00	福島県	Fukushima (Futaba-gun)	

8	3/20 07:00 ~ 08:00	茨城県	Ibaraki (Mito)	0.162
9	3/20 07:00 ~ 08:00	栃木県	Tochigi (Itsunomiya	0.142
10	3/20 07:00 ~ 08:00	群馬県	Gunma (Maebashi)	0.073
11	3/20 07:00 ~ 08:00	埼玉県	Saitama (Saitama)	0.054
12	3/20 07:00 ~ 08:00	千葉県	Chiba (Ichihara)	0.034
13	3/20 07:00 ~ 08:00	東京都	Tokyo (Shinjuku-ku	0.046
14	3/20 07:00 ~ 08:00	神奈川県	Kanagawa (Chigasa	0.048
15	3/20 07:00 ~ 08:00	新潟県	Niigata (Niigata)	0.047
16	3/20 07:00 ~ 08:00	富山県	Toyama (Imizu)	0.049
17	3/20 07:00 ~ 08:00	石川県	Ishikawa (Kanazawa	0.048
18	3/20 07:00 ~ 08:00	福井県	Fukui (Fukui)	0.046
19	3/20 07:00 ~ 08:00	山梨県	Yamanashi (Kofu)	0.045
20	3/20 07:00 ~ 08:00	長野県	Nagano (Nagano)	0.067
21	3/20 07:00 ~ 08:00	岐阜県	Gifu (Kakamigahara	0.063
22	3/20 07:00 ~ 08:00	静岡県	Shizuoka (Shizuoka	0.037
23	3/20 07:00 ~ 08:00	愛知県	Aichi (Nagoya)	0.042
24	3/20 07:00 ~ 08:00	三重県	Mie (Yokkaichi)	0.047
25	3/20 07:00 ~ 08:00	滋賀県	Shiga (Ohtsu)	0.038
26	3/20 07:00 ~ 08:00	京都府	Kyoto (Kyoto)	0.04
27	3/20 07:00 ~ 08:00	大阪府	Osaka (Osaka)	0.043
28	3/20 07:00 ~ 08:00	兵庫県	Hyogo (Kobe)	0.039
29	3/20 07:00 ~ 08:00	奈良県	Nara (Nara)	0.049
30	3/20 07:00 ~ 08:00	和歌山県	Wakayama (Wakaya	0.033
31	3/20 07:00 ~ 08:00	鳥取県	Tottori (Touhaku-g	0.064
32	3/20 07:00 ~ 08:00	島根県	Shimane (Matsue)	0.038
33	3/20 07:00 ~ 08:00	岡山県	Okayama (Okayama	0.052
34	3/20 07:00 ~ 08:00	広島県	Hiroshima (Hiroshin	0.051
35	3/20 07:00 ~ 08:00	山口県	Yamaguchi (Yamagu	0.097
36	3/20 07:00 ~ 08:00	徳島県	Tokushima (Tokush	0.039
37	3/20 07:00 ~ 08:00	香川県	Kagawa (Takamatsu	0.054
38	3/20 07:00 ~ 08:00	愛媛県	Ehime (Matsuyama)	0.05
39	3/20 07:00 ~ 08:00	高知県	Kochi (Kochi)	0.026
40	3/20 07:00 ~ 08:00	福岡県	Fukuoka (Dazaifu)	0.037
41	3/20 07:00 ~ 08:00	佐賀県	Saga (Saga)	0.041
42	3/20 07:00 ~ 08:00	長崎県	Nagasaki (Ohmura)	0.03
43	3/20 07:00 ~ 08:00	熊本県	Kumamoto (Uto)	0.029
44	3/20 07:00 ~ 08:00	大分県	Oita (Oita)	0.051
45	3/20 07:00 ~ 08:00	宮崎県	Miyazaki (Miyazaki)	0.027
46	3/20 07:00 ~ 08:00	鹿児島県	Kagoshima (Kagosh	0.035
47	3/20 07:00 ~ 08:00	沖縄県	Okinawa (Uruma)	0.021
1	3/20 08:00 ~ 09:00	北海道	Hokkaido (Sapporo)	0.028
2	3/20 08:00 ~ 09:00	青森県	Aomori (Aomori)	0.021
3	3/20 08:00 ~ 09:00	岩手県	Iwate (Morioka)	0.027
4	3/20 08:00 ~ 09:00	宮城県	Miyagi (Sendai)	
5	3/20 08:00 ~ 09:00	秋田県	Akita (Akita)	0.035
6	3/20 08:00 ~ 09:00	山形県	Yamagata (Yamaga	0.041
7	3/20 08:00 ~ 09:00	福島県	Fukushima (Futaba-gun)	
8	3/20 08:00 ~ 09:00	茨城県	Ibaraki (Mito)	0.161
9	3/20 08:00 ~ 09:00	栃木県	Tochigi (Itsunomiya	0.141
10	3/20 08:00 ~ 09:00	群馬県	Gunma (Maebashi)	0.073
11	3/20 08:00 ~ 09:00	埼玉県	Saitama (Saitama)	0.054
12	3/20 08:00 ~ 09:00	千葉県	Chiba (Ichihara)	0.033
13	3/20 08:00 ~ 09:00	東京都	Tokyo (Shinjuku-ku	0.046
14	3/20 08:00 ~ 09:00	神奈川県	Kanagawa (Chigasa	0.048
15	3/20 08:00 ~ 09:00	新潟県	Niigata (Niigata)	0.047
16	3/20 08:00 ~ 09:00	富山県	Toyama (Imizu)	0.049
17	3/20 08:00 ~ 09:00	石川県	Ishikawa (Kanazawa	0.048

18	3/20 08:00 ~ 09:00	福井県	Fukui (Fukui)	0.046
19	3/20 08:00 ~ 09:00	山梨県	Yamanashi (Kofu)	0.045
20	3/20 08:00 ~ 09:00	長野県	Nagano (Nagano)	0.066
21	3/20 08:00 ~ 09:00	岐阜県	Gifu (Kakamigahara	0.063
22	3/20 08:00 ~ 09:00	静岡県	Shizuoka (Shizuoka	0.036
23	3/20 08:00 ~ 09:00	愛知県	Aichi (Nagoya)	0.042
24	3/20 08:00 ~ 09:00	三重県	Mie (Yokkaichi)	0.046
25	3/20 08:00 ~ 09:00	滋賀県	Shiga (Ohtsu)	0.035
26	3/20 08:00 ~ 09:00	京都府	Kyoto (Kyoto)	0.04
27	3/20 08:00 ~ 09:00	大阪府	Osaka (Osaka)	0.043
28	3/20 08:00 ~ 09:00	兵庫県	Hyogo (Kobe)	0.038
29	3/20 08:00 ~ 09:00	奈良県	Nara (Nara)	0.048
30	3/20 08:00 ~ 09:00	和歌山県	Wakayama (Wakaya	0.033
31	3/20 08:00 ~ 09:00	鳥取県	Tottori (Touhaku-g	0.064
32	3/20 08:00 ~ 09:00	島根県	Shimane (Matsue)	0.039
33	3/20 08:00 ~ 09:00	岡山県	Okayama (Okayama	0.051
34	3/20 08:00 ~ 09:00	広島県	Hiroshima (Hiroshin	0.052
35	3/20 08:00 ~ 09:00	山口県	Yamaguchi (Yamagu	0.099
36	3/20 08:00 ~ 09:00	徳島県	Tokushima (Tokush	0.039
37	3/20 08:00 ~ 09:00	香川県	Kagawa (Takamatsu	0.054
38	3/20 08:00 ~ 09:00	愛媛県	Ehime (Matsuyama	0.049
39	3/20 08:00 ~ 09:00	高知県	Kochi (Kochi)	0.027
40	3/20 08:00 ~ 09:00	福岡県	Fukuoka (Dazaifu)	0.037
41	3/20 08:00 ~ 09:00	佐賀県	Saga (Saga)	0.042
42	3/20 08:00 ~ 09:00	長崎県	Nagasaki (Ohmura)	0.03
43	3/20 08:00 ~ 09:00	熊本県	Kumamoto (Uto)	0.031
44	3/20 08:00 ~ 09:00	大分県	Oita (Oita)	0.05
45	3/20 08:00 ~ 09:00	宮崎県	Miyazaki (Miyazaki)	0.026
46	3/20 08:00 ~ 09:00	鹿児島県	Kagoshima (Kagosh	0.036
47	3/20 08:00 ~ 09:00	沖縄県	Okinawa (Uruma)	0.02
1	3/20 09:00 ~ 10:00	北海道	Hokkaido (Sapporo)	0.028
2	3/20 09:00 ~ 10:00	青森県	Aomori (Aomori)	0.021
3	3/20 09:00 ~ 10:00	岩手県	Iwate (Morioka)	0.027
4	3/20 09:00 ~ 10:00	宮城県	Miyagi (Sendai)	
5	3/20 09:00 ~ 10:00	秋田県	Akita (Akita)	0.035
6	3/20 09:00 ~ 10:00	山形県	Yamagata (Yamaga	0.041
7	3/20 09:00 ~ 10:00	福島県	Fukushima (Futaba-gun)	
8	3/20 09:00 ~ 10:00	茨城県	Ibaraki (Mito)	0.161
9	3/20 09:00 ~ 10:00	栃木県	Tochigi (Itsunomiya	0.139
10	3/20 09:00 ~ 10:00	群馬県	Gunma (Maebashi)	0.071
11	3/20 09:00 ~ 10:00	埼玉県	Saitama (Saitama)	0.054
12	3/20 09:00 ~ 10:00	千葉県	Chiba (Ichihara)	0.033
13	3/20 09:00 ~ 10:00	東京都	Tokyo (Shinjuku-ku	0.046
14	3/20 09:00 ~ 10:00	神奈川県	Kanagawa (Chigasa	0.048
15	3/20 09:00 ~ 10:00	新潟県	Niigata (Niigata)	0.047
16	3/20 09:00 ~ 10:00	富山県	Toyama (Imizu)	0.049
17	3/20 09:00 ~ 10:00	石川県	Ishikawa (Kanazawa	0.048
18	3/20 09:00 ~ 10:00	福井県	Fukui (Fukui)	0.046
19	3/20 09:00 ~ 10:00	山梨県	Yamanashi (Kofu)	0.044
20	3/20 09:00 ~ 10:00	長野県	Nagano (Nagano)	0.066
21	3/20 09:00 ~ 10:00	岐阜県	Gifu (Kakamigahara	0.062
22	3/20 09:00 ~ 10:00	静岡県	Shizuoka (Shizuoka	0.037
23	3/20 09:00 ~ 10:00	愛知県	Aichi (Nagoya)	0.042
24	3/20 09:00 ~ 10:00	三重県	Mie (Yokkaichi)	0.047
25	3/20 09:00 ~ 10:00	滋賀県	Shiga (Ohtsu)	0.034
26	3/20 09:00 ~ 10:00	京都府	Kyoto (Kyoto)	0.039
27	3/20 09:00 ~ 10:00	大阪府	Osaka (Osaka)	0.043

28	3/20 09:00 ~ 10:00	兵庫県	Hyogo (Kobe)	0.037
29	3/20 09:00 ~ 10:00	奈良県	Nara (Nara)	0.049
30	3/20 09:00 ~ 10:00	和歌山県	Wakayama (Wakaya	0.033
31	3/20 09:00 ~ 10:00	鳥取県	Tottori (Touhaku-g	0.064
32	3/20 09:00 ~ 10:00	島根県	Shimane (Matsue)	0.039
33	3/20 09:00 ~ 10:00	岡山県	Okayama (Okayama	0.05
34	3/20 09:00 ~ 10:00	広島県	Hiroshima (Hiroshin	0.051
35	3/20 09:00 ~ 10:00	山口県	Yamaguchi (Yamagı	0.098
36	3/20 09:00 ~ 10:00	徳島県	Tokushima (Tokush	0.039
37	3/20 09:00 ~ 10:00	香川県	Kagawa (Takamatsı	0.054
38	3/20 09:00 ~ 10:00	愛媛県	Ehime (Matsuyama	0.048
39	3/20 09:00 ~ 10:00	高知県	Kochi (Kochi)	0.026
40	3/20 09:00 ~ 10:00	福岡県	Fukuoka (Dazaifu)	0.038
41	3/20 09:00 ~ 10:00	佐賀県	Saga (Saga)	0.045
42	3/20 09:00 ~ 10:00	長崎県	Nagasaki (Ohmura)	0.03
43	3/20 09:00 ~ 10:00	熊本県	Kumamoto (Uto)	0.03
44	3/20 09:00 ~ 10:00	大分県	Oita (Oita)	0.05
45	3/20 09:00 ~ 10:00	宮崎県	Miyazaki (Miyazaki)	0.026
46	3/20 09:00 ~ 10:00	鹿児島県	Kagoshima (Kagosh	0.036
47	3/20 09:00 ~ 10:00	沖縄県	Okinawa (Uruma)	0.021
1	3/20 10:00 ~ 11:00	北海道	Hokkaido (Sapporo)	0.028
2	3/20 10:00 ~ 11:00	青森県	Aomori (Aomori)	0.021
3	3/20 10:00 ~ 11:00	岩手県	Iwate (Morioka)	0.026
4	3/20 10:00 ~ 11:00	宮城県	Miyagi (Sendai)	
5	3/20 10:00 ~ 11:00	秋田県	Akita (Akita)	0.035
6	3/20 10:00 ~ 11:00	山形県	Yamagata (Yamaga	0.04
7	3/20 10:00 ~ 11:00	福島県	Fukushima (Futaba-gun)	
8	3/20 10:00 ~ 11:00	茨城県	Ibaraki (Mito)	0.159
9	3/20 10:00 ~ 11:00	栃木県	Tochigi (Itsunomiya	0.138
10	3/20 10:00 ~ 11:00	群馬県	Gunma (Maebashi)	0.07
11	3/20 10:00 ~ 11:00	埼玉県	Saitama (Saitama)	0.053
12	3/20 10:00 ~ 11:00	千葉県	Chiba (Ichihara)	0.033
13	3/20 10:00 ~ 11:00	東京都	Tokyo (Shinjuku-ku	0.046
14	3/20 10:00 ~ 11:00	神奈川県	Kanagawa (Chigasa	0.047
15	3/20 10:00 ~ 11:00	新潟県	Niigata (Niigata)	0.047
16	3/20 10:00 ~ 11:00	富山県	Toyama (Imizu)	0.049
17	3/20 10:00 ~ 11:00	石川県	Ishikawa (Kanazawa	0.047
18	3/20 10:00 ~ 11:00	福井県	Fukui (Fukui)	0.046
19	3/20 10:00 ~ 11:00	山梨県	Yamanashi (Kofu)	0.044
20	3/20 10:00 ~ 11:00	長野県	Nagano (Nagano)	0.065
21	3/20 10:00 ~ 11:00	岐阜県	Gifu (Kakamigahara	0.062
22	3/20 10:00 ~ 11:00	静岡県	Shizuoka (Shizuoka	0.038
23	3/20 10:00 ~ 11:00	愛知県	Aichi (Nagoya)	0.042
24	3/20 10:00 ~ 11:00	三重県	Mie (Yokkaichi)	0.047
25	3/20 10:00 ~ 11:00	滋賀県	Shiga (Ohtsu)	0.034
26	3/20 10:00 ~ 11:00	京都府	Kyoto (Kyoto)	0.039
27	3/20 10:00 ~ 11:00	大阪府	Osaka (Osaka)	0.043
28	3/20 10:00 ~ 11:00	兵庫県	Hyogo (Kobe)	0.037
29	3/20 10:00 ~ 11:00	奈良県	Nara (Nara)	0.049
30	3/20 10:00 ~ 11:00	和歌山県	Wakayama (Wakaya	0.033
31	3/20 10:00 ~ 11:00	鳥取県	Tottori (Touhaku-g	0.063
32	3/20 10:00 ~ 11:00	島根県	Shimane (Matsue)	0.038
33	3/20 10:00 ~ 11:00	岡山県	Okayama (Okayama	0.05
34	3/20 10:00 ~ 11:00	広島県	Hiroshima (Hiroshin	0.051
35	3/20 10:00 ~ 11:00	山口県	Yamaguchi (Yamagı	0.096
36	3/20 10:00 ~ 11:00	徳島県	Tokushima (Tokush	0.039
37	3/20 10:00 ~ 11:00	香川県	Kagawa (Takamatsı	0.053

38	3/20 10:00 ~ 11:00	愛媛県	Ehime (Matsuyama	0.048
39	3/20 10:00 ~ 11:00	高知県	Kochi (Kochi)	0.026
40	3/20 10:00 ~ 11:00	福岡県	Fukuoka (Dazaifu)	0.039
41	3/20 10:00 ~ 11:00	佐賀県	Saga (Saga)	0.048
42	3/20 10:00 ~ 11:00	長崎県	Nagasaki (Ohmura)	0.032
43	3/20 10:00 ~ 11:00	熊本県	Kumamoto (Uto)	0.028
44	3/20 10:00 ~ 11:00	大分県	Oita (Oita)	0.051
45	3/20 10:00 ~ 11:00	宮崎県	Miyazaki (Miyazaki)	0.026
46	3/20 10:00 ~ 11:00	鹿児島県	Kagoshima (Kagosh	0.038
47	3/20 10:00 ~ 11:00	沖縄県	Okinawa (Uruma)	0.021
1	3/20 11:00 ~ 12:00	北海道	Hokkaido (Sapporo	0.028
2	3/20 11:00 ~ 12:00	青森県	Aomori (Aomori)	0.021
3	3/20 11:00 ~ 12:00	岩手県	Iwate (Morioka)	0.026
4	3/20 11:00 ~ 12:00	宮城県	Miyagi (Sendai)	
5	3/20 11:00 ~ 12:00	秋田県	Akita (Akita)	0.034
6	3/20 11:00 ~ 12:00	山形県	Yamagata (Yamaga	0.04
7	3/20 11:00 ~ 12:00	福島県	Fukushima (Futaba-gun)	
8	3/20 11:00 ~ 12:00	茨城県	Ibaraki (Mito)	0.263
9	3/20 11:00 ~ 12:00	栃木県	Tochigi (Itsunomiya	0.137
10	3/20 11:00 ~ 12:00	群馬県	Gunma (Maebashi)	0.069
11	3/20 11:00 ~ 12:00	埼玉県	Saitama (Saitama)	0.053
12	3/20 11:00 ~ 12:00	千葉県	Chiba (Ichihara)	0.033
13	3/20 11:00 ~ 12:00	東京都	Tokyo (Shinjuku-ku	0.046
14	3/20 11:00 ~ 12:00	神奈川県	Kanagawa (Chigasa	0.047
15	3/20 11:00 ~ 12:00	新潟県	Niigata (Niigata)	0.047
16	3/20 11:00 ~ 12:00	富山県	Toyama (Imizu)	0.049
17	3/20 11:00 ~ 12:00	石川県	Ishikawa (Kanazawa	0.047
18	3/20 11:00 ~ 12:00	福井県	Fukui (Fukui)	0.046
19	3/20 11:00 ~ 12:00	山梨県	Yamanashi (Kofu)	0.044
20	3/20 11:00 ~ 12:00	長野県	Nagano (Nagano)	0.064
21	3/20 11:00 ~ 12:00	岐阜県	Gifu (Kakamigahara	0.062
22	3/20 11:00 ~ 12:00	静岡県	Shizuoka (Shizuoka	0.038
23	3/20 11:00 ~ 12:00	愛知県	Aichi (Nagoya)	0.041
24	3/20 11:00 ~ 12:00	三重県	Mie (Yokkaichi)	0.046
25	3/20 11:00 ~ 12:00	滋賀県	Shiga (Ohtsu)	0.034
26	3/20 11:00 ~ 12:00	京都府	Kyoto (Kyoto)	0.039
27	3/20 11:00 ~ 12:00	大阪府	Osaka (Osaka)	0.043
28	3/20 11:00 ~ 12:00	兵庫県	Hyogo (Kobe)	0.037
29	3/20 11:00 ~ 12:00	奈良県	Nara (Nara)	0.049
30	3/20 11:00 ~ 12:00	和歌山県	Wakayama (Wakaya	0.032
31	3/20 11:00 ~ 12:00	鳥取県	Tottori (Touhaku-g	0.063
32	3/20 11:00 ~ 12:00	島根県	Shimane (Matsue)	0.038
33	3/20 11:00 ~ 12:00	岡山県	Okayama (Okayama	0.05
34	3/20 11:00 ~ 12:00	広島県	Hiroshima (Hiroshin	0.05
35	3/20 11:00 ~ 12:00	山口県	Yamaguchi (Yamagu	0.096
36	3/20 11:00 ~ 12:00	徳島県	Tokushima (Tokush	0.038
37	3/20 11:00 ~ 12:00	香川県	Kagawa (Takamatsu	0.053
38	3/20 11:00 ~ 12:00	愛媛県	Ehime (Matsuyama	0.048
39	3/20 11:00 ~ 12:00	高知県	Kochi (Kochi)	0.026
40	3/20 11:00 ~ 12:00	福岡県	Fukuoka (Dazaifu)	0.038
41	3/20 11:00 ~ 12:00	佐賀県	Saga (Saga)	0.045
42	3/20 11:00 ~ 12:00	長崎県	Nagasaki (Ohmura)	0.031
43	3/20 11:00 ~ 12:00	熊本県	Kumamoto (Uto)	0.027
44	3/20 11:00 ~ 12:00	大分県	Oita (Oita)	0.05
45	3/20 11:00 ~ 12:00	宮崎県	Miyazaki (Miyazaki)	0.026
46	3/20 11:00 ~ 12:00	鹿児島県	Kagoshima (Kagosh	0.037
47	3/20 11:00 ~ 12:00	沖縄県	Okinawa (Uruma)	0.021

http://www.mext.go.jp/component/a_menu/other/detail/_icsFiles/afieldfile/2011/03/15/1303577_05_1.pd
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1	3/20 12:00 ~ 13:00	北海道	Hokkaido (Sapporo)	0.028
2	3/20 12:00 ~ 13:00	青森県	Aomori (Aomori)	0.021
3	3/20 12:00 ~ 13:00	岩手県	Iwate (Morioka)	0.026
4	3/20 12:00 ~ 13:00	宮城県	Miyagi (Sendai)	
5	3/20 12:00 ~ 13:00	秋田県	Akita (Akita)	0.034
6	3/20 12:00 ~ 13:00	山形県	Yamagata (Yamaga	0.04
7	3/20 12:00 ~ 13:00	福島県	Fukushima (Futaba-gun)	
8	3/20 12:00 ~ 13:00	茨城県	Ibaraki (Mito)	0.204
9	3/20 12:00 ~ 13:00	栃木県	Tochigi (Itsunomiya	0.136
10	3/20 12:00 ~ 13:00	群馬県	Gunma (Maebashi)	0.069
11	3/20 12:00 ~ 13:00	埼玉県	Saitama (Saitama)	0.053
12	3/20 12:00 ~ 13:00	千葉県	Chiba (Ichihara)	0.033
13	3/20 12:00 ~ 13:00	東京都	Tokyo (Shinjuku-ku	0.045
14	3/20 12:00 ~ 13:00	神奈川県	Kanagawa (Chigasa	0.047
15	3/20 12:00 ~ 13:00	新潟県	Niigata (Niigata)	0.047
16	3/20 12:00 ~ 13:00	富山県	Toyama (Imizu)	0.049
17	3/20 12:00 ~ 13:00	石川県	Ishikawa (Kanazawa	0.048
18	3/20 12:00 ~ 13:00	福井県	Fukui (Fukui)	0.046
19	3/20 12:00 ~ 13:00	山梨県	Yamanashi (Kofu)	0.044
20	3/20 12:00 ~ 13:00	長野県	Nagano (Nagano)	0.064
21	3/20 12:00 ~ 13:00	岐阜県	Gifu (Kakamigahara	0.061
22	3/20 12:00 ~ 13:00	静岡県	Shizuoka (Shizuoka	0.038
23	3/20 12:00 ~ 13:00	愛知県	Aichi (Nagoya)	0.04
24	3/20 12:00 ~ 13:00	三重県	Mie (Yokkaichi)	0.047
25	3/20 12:00 ~ 13:00	滋賀県	Shiga (Ohtsu)	0.034
26	3/20 12:00 ~ 13:00	京都府	Kyoto (Kyoto)	0.039
27	3/20 12:00 ~ 13:00	大阪府	Osaka (Osaka)	0.043
28	3/20 12:00 ~ 13:00	兵庫県	Hyogo (Kobe)	0.037
29	3/20 12:00 ~ 13:00	奈良県	Nara (Nara)	0.048
30	3/20 12:00 ~ 13:00	和歌山県	Wakayama (Wakaya	0.032
31	3/20 12:00 ~ 13:00	鳥取県	Tottori (Touhaku-g	0.063
32	3/20 12:00 ~ 13:00	島根県	Shimane (Matsue)	0.041
33	3/20 12:00 ~ 13:00	岡山県	Okayama (Okayama	0.05
34	3/20 12:00 ~ 13:00	広島県	Hiroshima (Hiroshin	0.05
35	3/20 12:00 ~ 13:00	山口県	Yamaguchi (Yamagu	0.095
36	3/20 12:00 ~ 13:00	徳島県	Tokushima (Tokush	0.038
37	3/20 12:00 ~ 13:00	香川県	Kagawa (Takamatsu	0.053
38	3/20 12:00 ~ 13:00	愛媛県	Ehime (Matsuyama)	0.048
39	3/20 12:00 ~ 13:00	高知県	Kochi (Kochi)	0.026
40	3/20 12:00 ~ 13:00	福岡県	Fukuoka (Dazaifu)	0.038
41	3/20 12:00 ~ 13:00	佐賀県	Saga (Saga)	0.046
42	3/20 12:00 ~ 13:00	長崎県	Nagasaki (Ohmura)	0.033
43	3/20 12:00 ~ 13:00	熊本県	Kumamoto (Uto)	0.028
44	3/20 12:00 ~ 13:00	大分県	Oita (Oita)	0.05
45	3/20 12:00 ~ 13:00	宮崎県	Miyazaki (Miyazaki)	0.026
46	3/20 12:00 ~ 13:00	鹿児島県	Kagoshima (Kagosh	0.035
47	3/20 12:00 ~ 13:00	沖縄県	Okinawa (Uruma)	0.021
1	3/20 13:00 ~ 14:00	北海道	Hokkaido (Sapporo)	0.028
2	3/20 13:00 ~ 14:00	青森県	Aomori (Aomori)	0.021
3	3/20 13:00 ~ 14:00	岩手県	Iwate (Morioka)	0.026
4	3/20 13:00 ~ 14:00	宮城県	Miyagi (Sendai)	
5	3/20 13:00 ~ 14:00	秋田県	Akita (Akita)	0.035
6	3/20 13:00 ~ 14:00	山形県	Yamagata (Yamaga	0.04
7	3/20 13:00 ~ 14:00	福島県	Fukushima (Futaba-gun)	
8	3/20 13:00 ~ 14:00	茨城県	Ibaraki (Mito)	0.186
9	3/20 13:00 ~ 14:00	栃木県	Tochigi (Itsunomiya	0.14
10	3/20 13:00 ~ 14:00	群馬県	Gunma (Maebashi)	0.069

11	3/20 13:00 ~ 14:00	埼玉県	Saitama (Saitama)	0.053
12	3/20 13:00 ~ 14:00	千葉県	Chiba (Ichihara)	0.033
13	3/20 13:00 ~ 14:00	東京都	Tokyo (Shinjuku-ku	0.045
14	3/20 13:00 ~ 14:00	神奈川県	Kanagawa (Chigasa	0.047
15	3/20 13:00 ~ 14:00	新潟県	Niigata (Niigata)	0.047
16	3/20 13:00 ~ 14:00	富山県	Toyama (Imizu)	0.049
17	3/20 13:00 ~ 14:00	石川県	Ishikawa (Kanazawa	0.048
18	3/20 13:00 ~ 14:00	福井県	Fukui (Fukui)	0.046
19	3/20 13:00 ~ 14:00	山梨県	Yamanashi (Kofu)	0.044
20	3/20 13:00 ~ 14:00	長野県	Nagano (Nagano)	0.063
21	3/20 13:00 ~ 14:00	岐阜県	Gifu (Kakamigahara	0.061
22	3/20 13:00 ~ 14:00	静岡県	Shizuoka (Shizuoka	0.038
23	3/20 13:00 ~ 14:00	愛知県	Aichi (Nagoya)	0.04
24	3/20 13:00 ~ 14:00	三重県	Mie (Yokkaichi)	0.046
25	3/20 13:00 ~ 14:00	滋賀県	Shiga (Ohtsu)	0.034
26	3/20 13:00 ~ 14:00	京都府	Kyoto (Kyoto)	0.039
27	3/20 13:00 ~ 14:00	大阪府	Osaka (Osaka)	0.043
28	3/20 13:00 ~ 14:00	兵庫県	Hyogo (Kobe)	0.037
29	3/20 13:00 ~ 14:00	奈良県	Nara (Nara)	0.048
30	3/20 13:00 ~ 14:00	和歌山県	Wakayama (Wakaya	0.031
31	3/20 13:00 ~ 14:00	鳥取県	Tottori (Touhaku-g	0.063
32	3/20 13:00 ~ 14:00	島根県	Shimane (Matsue)	0.039
33	3/20 13:00 ~ 14:00	岡山県	Okayama (Okayama	0.049
34	3/20 13:00 ~ 14:00	広島県	Hiroshima (Hiroshin	0.051
35	3/20 13:00 ~ 14:00	山口県	Yamaguchi (Yamagu	0.095
36	3/20 13:00 ~ 14:00	徳島県	Tokushima (Tokush	0.037
37	3/20 13:00 ~ 14:00	香川県	Kagawa (Takamatsu	0.053
38	3/20 13:00 ~ 14:00	愛媛県	Ehime (Matsuyama	0.048
39	3/20 13:00 ~ 14:00	高知県	Kochi (Kochi)	0.028
40	3/20 13:00 ~ 14:00	福岡県	Fukuoka (Dazaifu)	0.039
41	3/20 13:00 ~ 14:00	佐賀県	Saga (Saga)	0.048
42	3/20 13:00 ~ 14:00	長崎県	Nagasaki (Ohmura)	0.033
43	3/20 13:00 ~ 14:00	熊本県	Kumamoto (Uto)	0.028
44	3/20 13:00 ~ 14:00	大分県	Oita (Oita)	0.05
45	3/20 13:00 ~ 14:00	宮崎県	Miyazaki (Miyazaki)	0.026
46	3/20 13:00 ~ 14:00	鹿児島県	Kagoshima (Kagosh	0.034
47	3/20 13:00 ~ 14:00	沖縄県	Okinawa (Uruma)	0.02
1	3/20 14:00 ~ 15:00	北海道	Hokkaido (Sapporo)	0.028
2	3/20 14:00 ~ 15:00	青森県	Aomori (Aomori)	0.021
3	3/20 14:00 ~ 15:00	岩手県	Iwate (Morioka)	0.026
4	3/20 14:00 ~ 15:00	宮城県	Miyagi (Sendai)	
5	3/20 14:00 ~ 15:00	秋田県	Akita (Akita)	0.034
6	3/20 14:00 ~ 15:00	山形県	Yamagata (Yamaga	0.04
7	3/20 14:00 ~ 15:00	福島県	Fukushima (Futaba-gun)	
8	3/20 14:00 ~ 15:00	茨城県	Ibaraki (Mito)	0.183
9	3/20 14:00 ~ 15:00	栃木県	Tochigi (Itsunomiya	0.164
10	3/20 14:00 ~ 15:00	群馬県	Gunma (Maebashi)	0.069
11	3/20 14:00 ~ 15:00	埼玉県	Saitama (Saitama)	0.052
12	3/20 14:00 ~ 15:00	千葉県	Chiba (Ichihara)	0.032
13	3/20 14:00 ~ 15:00	東京都	Tokyo (Shinjuku-ku	0.045
14	3/20 14:00 ~ 15:00	神奈川県	Kanagawa (Chigasa	0.047
15	3/20 14:00 ~ 15:00	新潟県	Niigata (Niigata)	0.047
16	3/20 14:00 ~ 15:00	富山県	Toyama (Imizu)	0.049
17	3/20 14:00 ~ 15:00	石川県	Ishikawa (Kanazawa	0.049
18	3/20 14:00 ~ 15:00	福井県	Fukui (Fukui)	0.047
19	3/20 14:00 ~ 15:00	山梨県	Yamanashi (Kofu)	0.044
20	3/20 14:00 ~ 15:00	長野県	Nagano (Nagano)	0.063

21	3/20 14:00 ~ 15:00	岐阜県	Gifu (Kakamigahara	0.061
22	3/20 14:00 ~ 15:00	静岡県	Shizuoka (Shizuoka	0.037
23	3/20 14:00 ~ 15:00	愛知県	Aichi (Nagoya)	0.04
24	3/20 14:00 ~ 15:00	三重県	Mie (Yokkaichi)	0.046
25	3/20 14:00 ~ 15:00	滋賀県	Shiga (Ohtsu)	0.034
26	3/20 14:00 ~ 15:00	京都府	Kyoto (Kyoto)	0.039
27	3/20 14:00 ~ 15:00	大阪府	Osaka (Osaka)	0.043
28	3/20 14:00 ~ 15:00	兵庫県	Hyogo (Kobe)	0.037
29	3/20 14:00 ~ 15:00	奈良県	Nara (Nara)	0.048
30	3/20 14:00 ~ 15:00	和歌山県	Wakayama (Wakaya	0.031
31	3/20 14:00 ~ 15:00	鳥取県	Tottori (Touhaku-g	0.064
32	3/20 14:00 ~ 15:00	島根県	Shimane (Matsue)	0.039
33	3/20 14:00 ~ 15:00	岡山県	Okayama (Okayama	0.049
34	3/20 14:00 ~ 15:00	広島県	Hiroshima (Hiroshin	0.053
35	3/20 14:00 ~ 15:00	山口県	Yamaguchi (Yamagı	0.097
36	3/20 14:00 ~ 15:00	徳島県	Tokushima (Tokush	0.037
37	3/20 14:00 ~ 15:00	香川県	Kagawa (Takamatsı	0.053
38	3/20 14:00 ~ 15:00	愛媛県	Ehime (Matsuyama)	0.048
39	3/20 14:00 ~ 15:00	高知県	Kochi (Kochi)	0.027
40	3/20 14:00 ~ 15:00	福岡県	Fukuoka (Dazaifu)	0.04
41	3/20 14:00 ~ 15:00	佐賀県	Saga (Saga)	0.049
42	3/20 14:00 ~ 15:00	長崎県	Nagasaki (Ohmura)	0.033
43	3/20 14:00 ~ 15:00	熊本県	Kumamoto (Uto)	0.03
44	3/20 14:00 ~ 15:00	大分県	Oita (Oita)	0.05
45	3/20 14:00 ~ 15:00	宮崎県	Miyazaki (Miyazaki)	0.026
46	3/20 14:00 ~ 15:00	鹿児島県	Kagoshima (Kagosh	0.034
47	3/20 14:00 ~ 15:00	沖縄県	Okinawa (Uruma)	0.021
1	3/20 15:00 ~ 16:00	北海道	Hokkaido (Sapporo)	0.028
2	3/20 15:00 ~ 16:00	青森県	Aomori (Aomori)	0.021
3	3/20 15:00 ~ 16:00	岩手県	Iwate (Morioka)	0.025
4	3/20 15:00 ~ 16:00	宮城県	Miyagi (Sendai)	
5	3/20 15:00 ~ 16:00	秋田県	Akita (Akita)	0.034
6	3/20 15:00 ~ 16:00	山形県	Yamagata (Yamaga	0.04
7	3/20 15:00 ~ 16:00	福島県	Fukushima (Futaba-gun)	
8	3/20 15:00 ~ 16:00	茨城県	Ibaraki (Mito)	0.177
9	3/20 15:00 ~ 16:00	栃木県	Tochigi (Itsunomiya	0.153
10	3/20 15:00 ~ 16:00	群馬県	Gunma (Maebashi)	0.069
11	3/20 15:00 ~ 16:00	埼玉県	Saitama (Saitama)	0.052
12	3/20 15:00 ~ 16:00	千葉県	Chiba (Ichihara)	0.032
13	3/20 15:00 ~ 16:00	東京都	Tokyo (Shinjuku-kı	0.045
14	3/20 15:00 ~ 16:00	神奈川県	Kanagawa (Chigasa	0.047
15	3/20 15:00 ~ 16:00	新潟県	Niigata (Niigata)	0.047
16	3/20 15:00 ~ 16:00	富山県	Toyama (Imizu)	0.051
17	3/20 15:00 ~ 16:00	石川県	Ishikawa (Kanazawa	0.052
18	3/20 15:00 ~ 16:00	福井県	Fukui (Fukui)	0.047
19	3/20 15:00 ~ 16:00	山梨県	Yamanashi (Kofu)	0.044
20	3/20 15:00 ~ 16:00	長野県	Nagano (Nagano)	0.063
21	3/20 15:00 ~ 16:00	岐阜県	Gifu (Kakamigahara	0.061
22	3/20 15:00 ~ 16:00	静岡県	Shizuoka (Shizuoka	0.036
23	3/20 15:00 ~ 16:00	愛知県	Aichi (Nagoya)	0.039
24	3/20 15:00 ~ 16:00	三重県	Mie (Yokkaichi)	0.046
25	3/20 15:00 ~ 16:00	滋賀県	Shiga (Ohtsu)	0.036
26	3/20 15:00 ~ 16:00	京都府	Kyoto (Kyoto)	0.043
27	3/20 15:00 ~ 16:00	大阪府	Osaka (Osaka)	0.044
28	3/20 15:00 ~ 16:00	兵庫県	Hyogo (Kobe)	0.036
29	3/20 15:00 ~ 16:00	奈良県	Nara (Nara)	0.051
30	3/20 15:00 ~ 16:00	和歌山県	Wakayama (Wakaya	0.031

31	3/20 15:00 ~ 16:00	鳥取県	Tottori (Touhaku-g	0.064
32	3/20 15:00 ~ 16:00	島根県	Shimane (Matsue)	0.04
33	3/20 15:00 ~ 16:00	岡山県	Okayama (Okayama	0.051
34	3/20 15:00 ~ 16:00	広島県	Hiroshima (Hiroshin	0.053
35	3/20 15:00 ~ 16:00	山口県	Yamaguchi (Yamagı	0.097
36	3/20 15:00 ~ 16:00	徳島県	Tokushima (Tokush	0.037
37	3/20 15:00 ~ 16:00	香川県	Kagawa (Takamatsı	0.053
38	3/20 15:00 ~ 16:00	愛媛県	Ehime (Matsuyama)	0.05
39	3/20 15:00 ~ 16:00	高知県	Kochi (Kochi)	0.027
40	3/20 15:00 ~ 16:00	福岡県	Fukuoka (Dazaifu)	0.039
41	3/20 15:00 ~ 16:00	佐賀県	Saga (Saga)	0.048
42	3/20 15:00 ~ 16:00	長崎県	Nagasaki (Ohmura)	0.032
43	3/20 15:00 ~ 16:00	熊本県	Kumamoto (Uto)	0.032
44	3/20 15:00 ~ 16:00	大分県	Oita (Oita)	0.051
45	3/20 15:00 ~ 16:00	宮崎県	Miyazaki (Miyazaki)	0.026
46	3/20 15:00 ~ 16:00	鹿児島県	Kagoshima (Kagosh	0.035
47	3/20 15:00 ~ 16:00	沖縄県	Okinawa (Uruma)	0.021
1	3/20 16:00 ~ 17:00	北海道	Hokkaido (Sapporo)	0.028
2	3/20 16:00 ~ 17:00	青森県	Aomori (Aomori)	0.021
3	3/20 16:00 ~ 17:00	岩手県	Iwate (Morioka)	0.026
4	3/20 16:00 ~ 17:00	宮城県	Miyagi (Sendai)	
5	3/20 16:00 ~ 17:00	秋田県	Akita (Akita)	0.035
6	3/20 16:00 ~ 17:00	山形県	Yamagata (Yamaga	0.04
7	3/20 16:00 ~ 17:00	福島県	Fukushima (Futaba-gun)	
8	3/20 16:00 ~ 17:00	茨城県	Ibaraki (Mito)	0.174
9	3/20 16:00 ~ 17:00	栃木県	Tochigi (Itsunomiya	0.153
10	3/20 16:00 ~ 17:00	群馬県	Gunma (Maebashi)	0.072
11	3/20 16:00 ~ 17:00	埼玉県	Saitama (Saitama)	0.052
12	3/20 16:00 ~ 17:00	千葉県	Chiba (Ichihara)	0.032
13	3/20 16:00 ~ 17:00	東京都	Tokyo (Shinjuku-ku	0.045
14	3/20 16:00 ~ 17:00	神奈川県	Kanagawa (Chigasa	0.047
15	3/20 16:00 ~ 17:00	新潟県	Niigata (Niigata)	0.047
16	3/20 16:00 ~ 17:00	富山県	Toyama (Imizu)	0.054
17	3/20 16:00 ~ 17:00	石川県	Ishikawa (Kanazawa	0.052
18	3/20 16:00 ~ 17:00	福井県	Fukui (Fukui)	0.048
19	3/20 16:00 ~ 17:00	山梨県	Yamanashi (Kofu)	0.044
20	3/20 16:00 ~ 17:00	長野県	Nagano (Nagano)	0.066
21	3/20 16:00 ~ 17:00	岐阜県	Gifu (Kakamigahara	0.065
22	3/20 16:00 ~ 17:00	静岡県	Shizuoka (Shizuoka	0.036
23	3/20 16:00 ~ 17:00	愛知県	Aichi (Nagoya)	0.04
24	3/20 16:00 ~ 17:00	三重県	Mie (Yokkaichi)	0.048
25	3/20 16:00 ~ 17:00	滋賀県	Shiga (Ohtsu)	0.037
26	3/20 16:00 ~ 17:00	京都府	Kyoto (Kyoto)	0.045
27	3/20 16:00 ~ 17:00	大阪府	Osaka (Osaka)	0.046
28	3/20 16:00 ~ 17:00	兵庫県	Hyogo (Kobe)	0.037
29	3/20 16:00 ~ 17:00	奈良県	Nara (Nara)	0.053
30	3/20 16:00 ~ 17:00	和歌山県	Wakayama (Wakaya	0.031
31	3/20 16:00 ~ 17:00	鳥取県	Tottori (Touhaku-g	0.064
32	3/20 16:00 ~ 17:00	島根県	Shimane (Matsue)	0.039
33	3/20 16:00 ~ 17:00	岡山県	Okayama (Okayama	0.053
34	3/20 16:00 ~ 17:00	広島県	Hiroshima (Hiroshin	0.051
35	3/20 16:00 ~ 17:00	山口県	Yamaguchi (Yamagı	0.096
36	3/20 16:00 ~ 17:00	徳島県	Tokushima (Tokush	0.037
37	3/20 16:00 ~ 17:00	香川県	Kagawa (Takamatsı	0.054
38	3/20 16:00 ~ 17:00	愛媛県	Ehime (Matsuyama)	0.051
39	3/20 16:00 ~ 17:00	高知県	Kochi (Kochi)	0.029
40	3/20 16:00 ~ 17:00	福岡県	Fukuoka (Dazaifu)	0.037

41	3/20 16:00 ~ 17:00	佐賀県	Saga (Saga)	0.045
42	3/20 16:00 ~ 17:00	長崎県	Nagasaki (Ohmura)	0.032
43	3/20 16:00 ~ 17:00	熊本県	Kumamoto (Uto)	0.031
44	3/20 16:00 ~ 17:00	大分県	Oita (Oita)	0.052
45	3/20 16:00 ~ 17:00	宮崎県	Miyazaki (Miyazaki)	0.027
46	3/20 16:00 ~ 17:00	鹿児島県	Kagoshima (Kagosh	0.037
47	3/20 16:00 ~ 17:00	沖縄県	Okinawa (Uruma)	0.02
1	3/20 17:00 ~ 18:00	北海道	Hokkaido (Sapporo)	0.028
2	3/20 17:00 ~ 18:00	青森県	Aomori (Aomori)	0.021
3	3/20 17:00 ~ 18:00	岩手県	Iwate (Morioka)	0.027
4	3/20 17:00 ~ 18:00	宮城県	Miyagi (Sendai)	
5	3/20 17:00 ~ 18:00	秋田県	Akita (Akita)	0.036
6	3/20 17:00 ~ 18:00	山形県	Yamagata (Yamaga	0.044
7	3/20 17:00 ~ 18:00	福島県	Fukushima (Futaba-gun)	
8	3/20 17:00 ~ 18:00	茨城県	Ibaraki (Mito)	0.172
9	3/20 17:00 ~ 18:00	栃木県	Tochigi (Itsunomiya	0.154
10	3/20 17:00 ~ 18:00	群馬県	Gunma (Maebashi)	0.096
11	3/20 17:00 ~ 18:00	埼玉県	Saitama (Saitama)	0.052
12	3/20 17:00 ~ 18:00	千葉県	Chiba (Ichihara)	0.032
13	3/20 17:00 ~ 18:00	東京都	Tokyo (Shinjuku-ku	0.045
14	3/20 17:00 ~ 18:00	神奈川県	Kanagawa (Chigasa	0.046
15	3/20 17:00 ~ 18:00	新潟県	Niigata (Niigata)	0.05
16	3/20 17:00 ~ 18:00	富山県	Toyama (Imizu)	0.052
17	3/20 17:00 ~ 18:00	石川県	Ishikawa (Kanazawa	0.049
18	3/20 17:00 ~ 18:00	福井県	Fukui (Fukui)	0.047
19	3/20 17:00 ~ 18:00	山梨県	Yamanashi (Kofu)	0.044
20	3/20 17:00 ~ 18:00	長野県	Nagano (Nagano)	0.067
21	3/20 17:00 ~ 18:00	岐阜県	Gifu (Kakamigahara	0.066
22	3/20 17:00 ~ 18:00	静岡県	Shizuoka (Shizuoka	0.037
23	3/20 17:00 ~ 18:00	愛知県	Aichi (Nagoya)	0.042
24	3/20 17:00 ~ 18:00	三重県	Mie (Yokkaichi)	0.051
25	3/20 17:00 ~ 18:00	滋賀県	Shiga (Ohtsu)	0.036
26	3/20 17:00 ~ 18:00	京都府	Kyoto (Kyoto)	0.042
27	3/20 17:00 ~ 18:00	大阪府	Osaka (Osaka)	0.045
28	3/20 17:00 ~ 18:00	兵庫県	Hyogo (Kobe)	0.037
29	3/20 17:00 ~ 18:00	奈良県	Nara (Nara)	0.051
30	3/20 17:00 ~ 18:00	和歌山県	Wakayama (Wakaya	0.032
31	3/20 17:00 ~ 18:00	鳥取県	Tottori (Touhaku-g	0.063
32	3/20 17:00 ~ 18:00	島根県	Shimane (Matsue)	0.04
33	3/20 17:00 ~ 18:00	岡山県	Okayama (Okayama	0.053
34	3/20 17:00 ~ 18:00	広島県	Hiroshima (Hiroshin	0.049
35	3/20 17:00 ~ 18:00	山口県	Yamaguchi (Yamagu	0.096
36	3/20 17:00 ~ 18:00	徳島県	Tokushima (Tokush	0.039
37	3/20 17:00 ~ 18:00	香川県	Kagawa (Takamatsu	0.054
38	3/20 17:00 ~ 18:00	愛媛県	Ehime (Matsuyama)	0.05
39	3/20 17:00 ~ 18:00	高知県	Kochi (Kochi)	0.028
40	3/20 17:00 ~ 18:00	福岡県	Fukuoka (Dazaifu)	0.037
41	3/20 17:00 ~ 18:00	佐賀県	Saga (Saga)	0.045
42	3/20 17:00 ~ 18:00	長崎県	Nagasaki (Ohmura)	0.032
43	3/20 17:00 ~ 18:00	熊本県	Kumamoto (Uto)	0.031
44	3/20 17:00 ~ 18:00	大分県	Oita (Oita)	0.053
45	3/20 17:00 ~ 18:00	宮崎県	Miyazaki (Miyazaki)	0.028
46	3/20 17:00 ~ 18:00	鹿児島県	Kagoshima (Kagosh	0.038
47	3/20 17:00 ~ 18:00	沖縄県	Okinawa (Uruma)	0.021
1	3/20 18:00 ~ 19:00	北海道	Hokkaido (Sapporo)	0.027
2	3/20 18:00 ~ 19:00	青森県	Aomori (Aomori)	0.021
3	3/20 18:00 ~ 19:00	岩手県	Iwate (Morioka)	0.029

4	3/20 18:00 ~ 19:00	宮城県	Miyagi (Sendai)	
5	3/20 18:00 ~ 19:00	秋田県	Akita (Akita)	0.04
6	3/20 18:00 ~ 19:00	山形県	Yamagata (Yamaga	0.1
7	3/20 18:00 ~ 19:00	福島県	Fukushima (Futaba-gun)	
8	3/20 18:00 ~ 19:00	茨城県	Ibaraki (Mito)	0.172
9	3/20 18:00 ~ 19:00	栃木県	Tochigi (Itsunomiya	0.152
10	3/20 18:00 ~ 19:00	群馬県	Gunma (Maebashi)	0.103
11	3/20 18:00 ~ 19:00	埼玉県	Saitama (Saitama)	0.052
12	3/20 18:00 ~ 19:00	千葉県	Chiba (Ichihara)	0.032
13	3/20 18:00 ~ 19:00	東京都	Tokyo (Shinjuku-ku	0.044
14	3/20 18:00 ~ 19:00	神奈川県	Kanagawa (Chigasa	0.046
15	3/20 18:00 ~ 19:00	新潟県	Niigata (Niigata)	0.052
16	3/20 18:00 ~ 19:00	富山県	Toyama (Imizu)	0.05
17	3/20 18:00 ~ 19:00	石川県	Ishikawa (Kanazawa	0.05
18	3/20 18:00 ~ 19:00	福井県	Fukui (Fukui)	0.046
19	3/20 18:00 ~ 19:00	山梨県	Yamanashi (Kofu)	0.045
20	3/20 18:00 ~ 19:00	長野県	Nagano (Nagano)	0.064
21	3/20 18:00 ~ 19:00	岐阜県	Gifu (Kakamigahara	0.064
22	3/20 18:00 ~ 19:00	静岡県	Shizuoka (Shizuoka	0.039
23	3/20 18:00 ~ 19:00	愛知県	Aichi (Nagoya)	0.04
24	3/20 18:00 ~ 19:00	三重県	Mie (Yokkaichi)	0.048
25	3/20 18:00 ~ 19:00	滋賀県	Shiga (Ohtsu)	0.035
26	3/20 18:00 ~ 19:00	京都府	Kyoto (Kyoto)	0.039
27	3/20 18:00 ~ 19:00	大阪府	Osaka (Osaka)	0.043
28	3/20 18:00 ~ 19:00	兵庫県	Hyogo (Kobe)	0.037
29	3/20 18:00 ~ 19:00	奈良県	Nara (Nara)	0.049
30	3/20 18:00 ~ 19:00	和歌山県	Wakayama (Wakaya	0.032
31	3/20 18:00 ~ 19:00	鳥取県	Tottori (Touhaku-g	0.066
32	3/20 18:00 ~ 19:00	島根県	Shimane (Matsue)	0.045
33	3/20 18:00 ~ 19:00	岡山県	Okayama (Okayama	0.051
34	3/20 18:00 ~ 19:00	広島県	Hiroshima (Hiroshin	0.048
35	3/20 18:00 ~ 19:00	山口県	Yamaguchi (Yamagu	0.095
36	3/20 18:00 ~ 19:00	徳島県	Tokushima (Tokush	0.038
37	3/20 18:00 ~ 19:00	香川県	Kagawa (Takamatsu	0.054
38	3/20 18:00 ~ 19:00	愛媛県	Ehime (Matsuyama	0.048
39	3/20 18:00 ~ 19:00	高知県	Kochi (Kochi)	0.028
40	3/20 18:00 ~ 19:00	福岡県	Fukuoka (Dazaifu)	0.037
41	3/20 18:00 ~ 19:00	佐賀県	Saga (Saga)	0.045
42	3/20 18:00 ~ 19:00	長崎県	Nagasaki (Ohmura)	0.031
43	3/20 18:00 ~ 19:00	熊本県	Kumamoto (Uto)	0.031
44	3/20 18:00 ~ 19:00	大分県	Oita (Oita)	0.051
45	3/20 18:00 ~ 19:00	宮崎県	Miyazaki (Miyazaki)	0.028
46	3/20 18:00 ~ 19:00	鹿児島県	Kagoshima (Kagosh	0.039
47	3/20 18:00 ~ 19:00	沖縄県	Okinawa (Uruma)	0.021
1	3/20 19:00 ~ 20:00	北海道	Hokkaido (Sapporo	0.028
2	3/20 19:00 ~ 20:00	青森県	Aomori (Aomori)	0.022
3	3/20 19:00 ~ 20:00	岩手県	Iwate (Morioka)	0.03
4	3/20 19:00 ~ 20:00	宮城県	Miyagi (Sendai)	
5	3/20 19:00 ~ 20:00	秋田県	Akita (Akita)	0.04
6	3/20 19:00 ~ 20:00	山形県	Yamagata (Yamaga	0.129
7	3/20 19:00 ~ 20:00	福島県	Fukushima (Futaba-gun)	
8	3/20 19:00 ~ 20:00	茨城県	Ibaraki (Mito)	0.171
9	3/20 19:00 ~ 20:00	栃木県	Tochigi (Itsunomiya	0.149
10	3/20 19:00 ~ 20:00	群馬県	Gunma (Maebashi)	0.099
11	3/20 19:00 ~ 20:00	埼玉県	Saitama (Saitama)	0.052
12	3/20 19:00 ~ 20:00	千葉県	Chiba (Ichihara)	0.031
13	3/20 19:00 ~ 20:00	東京都	Tokyo (Shinjuku-ku	0.045

http://www.mext.go.jp/component/a_menu/other/detail/_icsFiles/afieldfile/2011/03/15/1303577_05_1.pd
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14	3/20 19:00 ~ 20:00	神奈川県	Kanagawa (Chigasa	0.046
15	3/20 19:00 ~ 20:00	新潟県	Niigata (Niigata)	0.052
16	3/20 19:00 ~ 20:00	富山県	Toyama (Imizu)	0.052
17	3/20 19:00 ~ 20:00	石川県	Ishikawa (Kanazawa	0.054
18	3/20 19:00 ~ 20:00	福井県	Fukui (Fukui)	0.045
19	3/20 19:00 ~ 20:00	山梨県	Yamanashi (Kofu)	0.044
20	3/20 19:00 ~ 20:00	長野県	Nagano (Nagano)	0.064
21	3/20 19:00 ~ 20:00	岐阜県	Gifu (Kakamigahara	0.063
22	3/20 19:00 ~ 20:00	静岡県	Shizuoka (Shizuoka	0.04
23	3/20 19:00 ~ 20:00	愛知県	Aichi (Nagoya)	0.04
24	3/20 19:00 ~ 20:00	三重県	Mie (Yokkaichi)	0.047
25	3/20 19:00 ~ 20:00	滋賀県	Shiga (Ohtsu)	0.034
26	3/20 19:00 ~ 20:00	京都府	Kyoto (Kyoto)	0.038
27	3/20 19:00 ~ 20:00	大阪府	Osaka (Osaka)	0.042
28	3/20 19:00 ~ 20:00	兵庫県	Hyogo (Kobe)	0.036
29	3/20 19:00 ~ 20:00	奈良県	Nara (Nara)	0.048
30	3/20 19:00 ~ 20:00	和歌山県	Wakayama (Wakaya	0.032
31	3/20 19:00 ~ 20:00	鳥取県	Tottori (Touhaku-g	0.071
32	3/20 19:00 ~ 20:00	島根県	Shimane (Matsue)	0.044
33	3/20 19:00 ~ 20:00	岡山県	Okayama (Okayama	0.05
34	3/20 19:00 ~ 20:00	広島県	Hiroshima (Hiroshin	0.048
35	3/20 19:00 ~ 20:00	山口県	Yamaguchi (Yamagu	0.097
36	3/20 19:00 ~ 20:00	徳島県	Tokushima (Tokush	0.038
37	3/20 19:00 ~ 20:00	香川県	Kagawa (Takamatsu	0.053
38	3/20 19:00 ~ 20:00	愛媛県	Ehime (Matsuyama)	0.047
39	3/20 19:00 ~ 20:00	高知県	Kochi (Kochi)	0.027
40	3/20 19:00 ~ 20:00	福岡県	Fukuoka (Dazaifu)	0.037
41	3/20 19:00 ~ 20:00	佐賀県	Saga (Saga)	0.045
42	3/20 19:00 ~ 20:00	長崎県	Nagasaki (Ohmura)	0.031
43	3/20 19:00 ~ 20:00	熊本県	Kumamoto (Uto)	0.032
44	3/20 19:00 ~ 20:00	大分県	Oita (Oita)	0.051
45	3/20 19:00 ~ 20:00	宮崎県	Miyazaki (Miyazaki)	0.028
46	3/20 19:00 ~ 20:00	鹿児島県	Kagoshima (Kagosh	0.038
47	3/20 19:00 ~ 20:00	沖縄県	Okinawa (Uruma)	0.02
1	3/20 20:00 ~ 21:00	北海道	Hokkaido (Sapporo)	0.028
2	3/20 20:00 ~ 21:00	青森県	Aomori (Aomori)	0.023
3	3/20 20:00 ~ 21:00	岩手県	Iwate (Morioka)	0.039
4	3/20 20:00 ~ 21:00	宮城県	Miyagi (Sendai)	
5	3/20 20:00 ~ 21:00	秋田県	Akita (Akita)	0.041
6	3/20 20:00 ~ 21:00	山形県	Yamagata (Yamaga	0.125
7	3/20 20:00 ~ 21:00	福島県	Fukushima (Futaba-gun)	
8	3/20 20:00 ~ 21:00	茨城県	Ibaraki (Mito)	0.17
9	3/20 20:00 ~ 21:00	栃木県	Tochigi (Itsunomiya	0.147
10	3/20 20:00 ~ 21:00	群馬県	Gunma (Maebashi)	0.083
11	3/20 20:00 ~ 21:00	埼玉県	Saitama (Saitama)	0.055
12	3/20 20:00 ~ 21:00	千葉県	Chiba (Ichihara)	0.031
13	3/20 20:00 ~ 21:00	東京都	Tokyo (Shinjuku-ku	0.044
14	3/20 20:00 ~ 21:00	神奈川県	Kanagawa (Chigasa	0.046
15	3/20 20:00 ~ 21:00	新潟県	Niigata (Niigata)	0.051
16	3/20 20:00 ~ 21:00	富山県	Toyama (Imizu)	0.053
17	3/20 20:00 ~ 21:00	石川県	Ishikawa (Kanazawa	0.058
18	3/20 20:00 ~ 21:00	福井県	Fukui (Fukui)	0.047
19	3/20 20:00 ~ 21:00	山梨県	Yamanashi (Kofu)	0.044
20	3/20 20:00 ~ 21:00	長野県	Nagano (Nagano)	0.065
21	3/20 20:00 ~ 21:00	岐阜県	Gifu (Kakamigahara	0.064
22	3/20 20:00 ~ 21:00	静岡県	Shizuoka (Shizuoka	0.038
23	3/20 20:00 ~ 21:00	愛知県	Aichi (Nagoya)	0.041

24	3/20 20:00 ~ 21:00	三重県	Mie (Yokkaichi)	0.048
25	3/20 20:00 ~ 21:00	滋賀県	Shiga (Ohtsu)	0.034
26	3/20 20:00 ~ 21:00	京都府	Kyoto (Kyoto)	0.039
27	3/20 20:00 ~ 21:00	大阪府	Osaka (Osaka)	0.042
28	3/20 20:00 ~ 21:00	兵庫県	Hyogo (Kobe)	0.036
29	3/20 20:00 ~ 21:00	奈良県	Nara (Nara)	0.048
30	3/20 20:00 ~ 21:00	和歌山県	Wakayama (Wakaya	0.032
31	3/20 20:00 ~ 21:00	鳥取県	Tottori (Touhaku-g	0.071
32	3/20 20:00 ~ 21:00	島根県	Shimane (Matsue)	0.042
33	3/20 20:00 ~ 21:00	岡山県	Okayama (Okayam	0.05
34	3/20 20:00 ~ 21:00	広島県	Hiroshima (Hiroshin	0.049
35	3/20 20:00 ~ 21:00	山口県	Yamaguchi (Yamagı	0.097
36	3/20 20:00 ~ 21:00	徳島県	Tokushima (Tokusl	0.038
37	3/20 20:00 ~ 21:00	香川県	Kagawa (Takamatsı	0.053
38	3/20 20:00 ~ 21:00	愛媛県	Ehime (Matsuyama	0.049
39	3/20 20:00 ~ 21:00	高知県	Kochi (Kochi)	0.028
40	3/20 20:00 ~ 21:00	福岡県	Fukuoka (Dazaifu)	0.037
41	3/20 20:00 ~ 21:00	佐賀県	Saga (Saga)	0.043
42	3/20 20:00 ~ 21:00	長崎県	Nagasaki (Ohmura)	0.029
43	3/20 20:00 ~ 21:00	熊本県	Kumamoto (Uto)	0.03
44	3/20 20:00 ~ 21:00	大分県	Oita (Oita)	0.051
45	3/20 20:00 ~ 21:00	宮崎県	Miyazaki (Miyazaki)	0.027
46	3/20 20:00 ~ 21:00	鹿児島県	Kagoshima (Kagosh	0.037
47	3/20 20:00 ~ 21:00	沖縄県	Okinawa (Uruma)	0.021
1	3/20 21:00 ~ 22:00	北海道	Hokkaido (Sapporo	0.028
2	3/20 21:00 ~ 22:00	青森県	Aomori (Aomori)	0.022
3	3/20 21:00 ~ 22:00	岩手県	Iwate (Morioka)	0.04
4	3/20 21:00 ~ 22:00	宮城県	Miyagi (Sendai)	
5	3/20 21:00 ~ 22:00	秋田県	Akita (Akita)	0.041
6	3/20 21:00 ~ 22:00	山形県	Yamagata (Yamaga	0.123
7	3/20 21:00 ~ 22:00	福島県	Fukushima (Futaba-gun)	
8	3/20 21:00 ~ 22:00	茨城県	Ibaraki (Mito)	0.17
9	3/20 21:00 ~ 22:00	栃木県	Tochigi (Itsunomiya	0.146
10	3/20 21:00 ~ 22:00	群馬県	Gunma (Maebashi)	0.074
11	3/20 21:00 ~ 22:00	埼玉県	Saitama (Saitama)	0.059
12	3/20 21:00 ~ 22:00	千葉県	Chiba (Ichihara)	0.031
13	3/20 21:00 ~ 22:00	東京都	Tokyo (Shinjuku-kı	0.044
14	3/20 21:00 ~ 22:00	神奈川県	Kanagawa (Chigasa	0.046
15	3/20 21:00 ~ 22:00	新潟県	Niigata (Niigata)	0.051
16	3/20 21:00 ~ 22:00	富山県	Toyama (Imizu)	0.052
17	3/20 21:00 ~ 22:00	石川県	Ishikawa (Kanazaw	0.06
18	3/20 21:00 ~ 22:00	福井県	Fukui (Fukui)	0.049
19	3/20 21:00 ~ 22:00	山梨県	Yamanashi (Kofu)	0.044
20	3/20 21:00 ~ 22:00	長野県	Nagano (Nagano)	0.064
21	3/20 21:00 ~ 22:00	岐阜県	Gifu (Kakamigahara	0.064
22	3/20 21:00 ~ 22:00	静岡県	Shizuoka (Shizuoka	0.037
23	3/20 21:00 ~ 22:00	愛知県	Aichi (Nagoya)	0.041
24	3/20 21:00 ~ 22:00	三重県	Mie (Yokkaichi)	0.048
25	3/20 21:00 ~ 22:00	滋賀県	Shiga (Ohtsu)	0.036
26	3/20 21:00 ~ 22:00	京都府	Kyoto (Kyoto)	0.039
27	3/20 21:00 ~ 22:00	大阪府	Osaka (Osaka)	0.042
28	3/20 21:00 ~ 22:00	兵庫県	Hyogo (Kobe)	0.036
29	3/20 21:00 ~ 22:00	奈良県	Nara (Nara)	0.048
30	3/20 21:00 ~ 22:00	和歌山県	Wakayama (Wakaya	0.033
31	3/20 21:00 ~ 22:00	鳥取県	Tottori (Touhaku-g	0.075
32	3/20 21:00 ~ 22:00	島根県	Shimane (Matsue)	0.041
33	3/20 21:00 ~ 22:00	岡山県	Okayama (Okayam	0.05

34	3/20 21:00 ~ 22:00	広島県	Hiroshima (Hiroshin	0.05
35	3/20 21:00 ~ 22:00	山口県	Yamaguchi (Yamagı	0.094
36	3/20 21:00 ~ 22:00	徳島県	Tokushima (Tokush	0.038
37	3/20 21:00 ~ 22:00	香川県	Kagawa (Takamatsı	0.053
38	3/20 21:00 ~ 22:00	愛媛県	Ehime (Matsuyama)	0.05
39	3/20 21:00 ~ 22:00	高知県	Kochi (Kochi)	0.03
40	3/20 21:00 ~ 22:00	福岡県	Fukuoka (Dazaifu)	0.037
41	3/20 21:00 ~ 22:00	佐賀県	Saga (Saga)	0.04
42	3/20 21:00 ~ 22:00	長崎県	Nagasaki (Ohmura)	0.028
43	3/20 21:00 ~ 22:00	熊本県	Kumamoto (Uto)	0.028
44	3/20 21:00 ~ 22:00	大分県	Oita (Oita)	0.05
45	3/20 21:00 ~ 22:00	宮崎県	Miyazaki (Miyazaki)	0.027
46	3/20 21:00 ~ 22:00	鹿児島県	Kagoshima (Kagosh	0.035
47	3/20 21:00 ~ 22:00	沖縄県	Okinawa (Uruma)	0.021
1	3/20 22:00 ~ 23:00	北海道	Hokkaido (Sapporo)	0.028
2	3/20 22:00 ~ 23:00	青森県	Aomori (Aomori)	0.022
3	3/20 22:00 ~ 23:00	岩手県	Iwate (Morioka)	0.038
4	3/20 22:00 ~ 23:00	宮城県	Miyagi (Sendai)	
5	3/20 22:00 ~ 23:00	秋田県	Akita (Akita)	0.039
6	3/20 22:00 ~ 23:00	山形県	Yamagata (Yamaga	0.119
7	3/20 22:00 ~ 23:00	福島県	Fukushima (Futaba-gun)	
8	3/20 22:00 ~ 23:00	茨城県	Ibaraki (Mito)	0.169
9	3/20 22:00 ~ 23:00	栃木県	Tochigi (Itsunomiya	0.145
10	3/20 22:00 ~ 23:00	群馬県	Gunma (Maebashi)	0.074
11	3/20 22:00 ~ 23:00	埼玉県	Saitama (Saitama)	0.059
12	3/20 22:00 ~ 23:00	千葉県	Chiba (Ichihara)	0.031
13	3/20 22:00 ~ 23:00	東京都	Tokyo (Shinjuku-ku	0.048
14	3/20 22:00 ~ 23:00	神奈川県	Kanagawa (Chigasa	0.046
15	3/20 22:00 ~ 23:00	新潟県	Niigata (Niigata)	0.048
16	3/20 22:00 ~ 23:00	富山県	Toyama (Imizu)	0.054
17	3/20 22:00 ~ 23:00	石川県	Ishikawa (Kanazawa	0.063
18	3/20 22:00 ~ 23:00	福井県	Fukui (Fukui)	0.053
19	3/20 22:00 ~ 23:00	山梨県	Yamanashi (Kofu)	0.044
20	3/20 22:00 ~ 23:00	長野県	Nagano (Nagano)	0.061
21	3/20 22:00 ~ 23:00	岐阜県	Gifu (Kakamigahara	0.065
22	3/20 22:00 ~ 23:00	静岡県	Shizuoka (Shizuoka	0.036
23	3/20 22:00 ~ 23:00	愛知県	Aichi (Nagoya)	0.042
24	3/20 22:00 ~ 23:00	三重県	Mie (Yokkaichi)	0.05
25	3/20 22:00 ~ 23:00	滋賀県	Shiga (Ohtsu)	0.037
26	3/20 22:00 ~ 23:00	京都府	Kyoto (Kyoto)	0.04
27	3/20 22:00 ~ 23:00	大阪府	Osaka (Osaka)	0.043
28	3/20 22:00 ~ 23:00	兵庫県	Hyogo (Kobe)	0.037
29	3/20 22:00 ~ 23:00	奈良県	Nara (Nara)	0.048
30	3/20 22:00 ~ 23:00	和歌山県	Wakayama (Wakaya	0.033
31	3/20 22:00 ~ 23:00	鳥取県	Tottori (Touhaku-g	0.071
32	3/20 22:00 ~ 23:00	島根県	Shimane (Matsue)	0.038
33	3/20 22:00 ~ 23:00	岡山県	Okayama (Okayama	0.05
34	3/20 22:00 ~ 23:00	広島県	Hiroshima (Hiroshin	0.049
35	3/20 22:00 ~ 23:00	山口県	Yamaguchi (Yamagı	0.094
36	3/20 22:00 ~ 23:00	徳島県	Tokushima (Tokush	0.038
37	3/20 22:00 ~ 23:00	香川県	Kagawa (Takamatsı	0.053
38	3/20 22:00 ~ 23:00	愛媛県	Ehime (Matsuyama)	0.049
39	3/20 22:00 ~ 23:00	高知県	Kochi (Kochi)	0.03
40	3/20 22:00 ~ 23:00	福岡県	Fukuoka (Dazaifu)	0.038
41	3/20 22:00 ~ 23:00	佐賀県	Saga (Saga)	0.04
42	3/20 22:00 ~ 23:00	長崎県	Nagasaki (Ohmura)	0.028
43	3/20 22:00 ~ 23:00	熊本県	Kumamoto (Uto)	0.027

44	3/20 22:00 ~ 23:00	大分県	Oita (Oita)	0.05
45	3/20 22:00 ~ 23:00	宮崎県	Miyazaki (Miyazaki)	0.027
46	3/20 22:00 ~ 23:00	鹿児島県	Kagoshima (Kagosh	0.034
47	3/20 22:00 ~ 23:00	沖縄県	Okinawa (Uruma)	0.021
1	3/20 23:00 ~ 24:00	北海道	Hokkaido (Sapporo)	0.027
2	3/20 23:00 ~ 24:00	青森県	Aomori (Aomori)	0.022
3	3/20 23:00 ~ 24:00	岩手県	Iwate (Morioka)	0.037
4	3/20 23:00 ~ 24:00	宮城県	Miyagi (Sendai)	
5	3/20 23:00 ~ 24:00	秋田県	Akita (Akita)	0.036
6	3/20 23:00 ~ 24:00	山形県	Yamagata (Yamaga	0.117
7	3/20 23:00 ~ 24:00	福島県	Fukushima (Futaba-gun)	
8	3/20 23:00 ~ 24:00	茨城県	Ibaraki (Mito)	0.17
9	3/20 23:00 ~ 24:00	栃木県	Tochigi (Itsunomiya	0.146
10	3/20 23:00 ~ 24:00	群馬県	Gunma (Maebashi)	0.074
11	3/20 23:00 ~ 24:00	埼玉県	Saitama (Saitama)	0.062
12	3/20 23:00 ~ 24:00	千葉県	Chiba (Ichihara)	0.031
13	3/20 23:00 ~ 24:00	東京都	Tokyo (Shinjuku-ku	0.049
14	3/20 23:00 ~ 24:00	神奈川県	Kanagawa (Chigasa	0.046
15	3/20 23:00 ~ 24:00	新潟県	Niigata (Niigata)	0.048
16	3/20 23:00 ~ 24:00	富山県	Toyama (Imizu)	0.052
17	3/20 23:00 ~ 24:00	石川県	Ishikawa (Kanazawa	0.058
18	3/20 23:00 ~ 24:00	福井県	Fukui (Fukui)	0.05
19	3/20 23:00 ~ 24:00	山梨県	Yamanashi (Kofu)	0.044
20	3/20 23:00 ~ 24:00	長野県	Nagano (Nagano)	0.06
21	3/20 23:00 ~ 24:00	岐阜県	Gifu (Kakamigahara	0.066
22	3/20 23:00 ~ 24:00	静岡県	Shizuoka (Shizuoka	0.035
23	3/20 23:00 ~ 24:00	愛知県	Aichi (Nagoya)	0.042
24	3/20 23:00 ~ 24:00	三重県	Mie (Yokkaichi)	0.05
25	3/20 23:00 ~ 24:00	滋賀県	Shiga (Ohtsu)	0.035
26	3/20 23:00 ~ 24:00	京都府	Kyoto (Kyoto)	0.039
27	3/20 23:00 ~ 24:00	大阪府	Osaka (Osaka)	0.044
28	3/20 23:00 ~ 24:00	兵庫県	Hyogo (Kobe)	0.037
29	3/20 23:00 ~ 24:00	奈良県	Nara (Nara)	0.049
30	3/20 23:00 ~ 24:00	和歌山県	Wakayama (Wakaya	0.033
31	3/20 23:00 ~ 24:00	鳥取県	Tottori (Touhaku-g	0.065
32	3/20 23:00 ~ 24:00	島根県	Shimane (Matsue)	0.038
33	3/20 23:00 ~ 24:00	岡山県	Okayama (Okayama	0.051
34	3/20 23:00 ~ 24:00	広島県	Hiroshima (Hiroshin	0.049
35	3/20 23:00 ~ 24:00	山口県	Yamaguchi (Yamagu	0.095
36	3/20 23:00 ~ 24:00	徳島県	Tokushima (Tokush	0.039
37	3/20 23:00 ~ 24:00	香川県	Kagawa (Takamatsu	0.054
38	3/20 23:00 ~ 24:00	愛媛県	Ehime (Matsuyama)	0.048
39	3/20 23:00 ~ 24:00	高知県	Kochi (Kochi)	0.03
40	3/20 23:00 ~ 24:00	福岡県	Fukuoka (Dazaifu)	0.036
41	3/20 23:00 ~ 24:00	佐賀県	Saga (Saga)	0.04
42	3/20 23:00 ~ 24:00	長崎県	Nagasaki (Ohmura)	0.028
43	3/20 23:00 ~ 24:00	熊本県	Kumamoto (Uto)	0.027
44	3/20 23:00 ~ 24:00	大分県	Oita (Oita)	0.049
45	3/20 23:00 ~ 24:00	宮崎県	Miyazaki (Miyazaki)	0.026
46	3/20 23:00 ~ 24:00	鹿児島県	Kagoshima (Kagosh	0.034
47	3/20 23:00 ~ 24:00	沖縄県	Okinawa (Uruma)	0.021
1	3/21 00:00 ~ 01:00	北海道	Hokkaido (Sapporo)	0.027
2	3/21 00:00 ~ 01:00	青森県	Aomori (Aomori)	0.022
3	3/21 00:00 ~ 01:00	岩手県	Iwate (Morioka)	0.036
4	3/21 00:00 ~ 01:00	宮城県	Miyagi (Sendai)	
5	3/21 00:00 ~ 01:00	秋田県	Akita (Akita)	0.036
6	3/21 00:00 ~ 01:00	山形県	Yamagata (Yamaga	0.115

7	3/21 00:00 ~ 01:00	福島県	Fukushima (Futaba-gun)	
8	3/21 00:00 ~ 01:00	茨城県	Ibaraki (Mito)	0.17
9	3/21 00:00 ~ 01:00	栃木県	Tochigi (Itsunomiya	0.146
10	3/21 00:00 ~ 01:00	群馬県	Gunma (Maebashi)	0.074
11	3/21 00:00 ~ 01:00	埼玉県	Saitama (Saitama)	0.064
12	3/21 00:00 ~ 01:00	千葉県	Chiba (Ichihara)	0.031
13	3/21 00:00 ~ 01:00	東京都	Tokyo (Shinjuku-ku	0.051
14	3/21 00:00 ~ 01:00	神奈川県	Kanagawa (Chigasa	0.046
15	3/21 00:00 ~ 01:00	新潟県	Niigata (Niigata)	0.049
16	3/21 00:00 ~ 01:00	富山県	Toyama (Imizu)	0.05
17	3/21 00:00 ~ 01:00	石川県	Ishikawa (Kanazawa	0.054
18	3/21 00:00 ~ 01:00	福井県	Fukui (Fukui)	0.048
19	3/21 00:00 ~ 01:00	山梨県	Yamanashi (Kofu)	0.044
20	3/21 00:00 ~ 01:00	長野県	Nagano (Nagano)	0.059
21	3/21 00:00 ~ 01:00	岐阜県	Gifu (Kakamigahara	0.065
22	3/21 00:00 ~ 01:00	静岡県	Shizuoka (Shizuoka	0.034
23	3/21 00:00 ~ 01:00	愛知県	Aichi (Nagoya)	0.042
24	3/21 00:00 ~ 01:00	三重県	Mie (Yokkaichi)	0.052
25	3/21 00:00 ~ 01:00	滋賀県	Shiga (Ohtsu)	0.035
26	3/21 00:00 ~ 01:00	京都府	Kyoto (Kyoto)	0.039
27	3/21 00:00 ~ 01:00	大阪府	Osaka (Osaka)	0.044
28	3/21 00:00 ~ 01:00	兵庫県	Hyogo (Kobe)	0.037
29	3/21 00:00 ~ 01:00	奈良県	Nara (Nara)	0.05
30	3/21 00:00 ~ 01:00	和歌山県	Wakayama (Wakaya	0.034
31	3/21 00:00 ~ 01:00	鳥取県	Tottori (Touhaku-g	0.07
32	3/21 00:00 ~ 01:00	島根県	Shimane (Matsue)	0.04
33	3/21 00:00 ~ 01:00	岡山県	Okayama (Okayama	0.05
34	3/21 00:00 ~ 01:00	広島県	Hiroshima (Hiroshin	0.051
35	3/21 00:00 ~ 01:00	山口県	Yamaguchi (Yamagu	0.093
36	3/21 00:00 ~ 01:00	徳島県	Tokushima (Tokush	0.039
37	3/21 00:00 ~ 01:00	香川県	Kagawa (Takamatsu	0.053
38	3/21 00:00 ~ 01:00	愛媛県	Ehime (Matsuyama)	0.049
39	3/21 00:00 ~ 01:00	高知県	Kochi (Kochi)	0.03
40	3/21 00:00 ~ 01:00	福岡県	Fukuoka (Dazaifu)	0.036
41	3/21 00:00 ~ 01:00	佐賀県	Saga (Saga)	0.04
42	3/21 00:00 ~ 01:00	長崎県	Nagasaki (Ohmura)	0.029
43	3/21 00:00 ~ 01:00	熊本県	Kumamoto (Uto)	0.026
44	3/21 00:00 ~ 01:00	大分県	Oita (Oita)	0.05
45	3/21 00:00 ~ 01:00	宮崎県	Miyazaki (Miyazaki)	0.026
46	3/21 00:00 ~ 01:00	鹿児島県	Kagoshima (Kagosh	0.034
47	3/21 00:00 ~ 01:00	沖縄県	Okinawa (Uruma)	0.02
1	3/21 01:00 ~ 02:00	北海道	Hokkaido (Sapporo)	0.028
2	3/21 01:00 ~ 02:00	青森県	Aomori (Aomori)	0.022
3	3/21 01:00 ~ 02:00	岩手県	Iwate (Morioka)	0.035
4	3/21 01:00 ~ 02:00	宮城県	Miyagi (Sendai)	
5	3/21 01:00 ~ 02:00	秋田県	Akita (Akita)	0.035
6	3/21 01:00 ~ 02:00	山形県	Yamagata (Yamaga	0.114
7	3/21 01:00 ~ 02:00	福島県	Fukushima (Futaba-gun)	
8	3/21 01:00 ~ 02:00	茨城県	Ibaraki (Mito)	0.17
9	3/21 01:00 ~ 02:00	栃木県	Tochigi (Itsunomiya	0.149
10	3/21 01:00 ~ 02:00	群馬県	Gunma (Maebashi)	0.074
11	3/21 01:00 ~ 02:00	埼玉県	Saitama (Saitama)	0.065
12	3/21 01:00 ~ 02:00	千葉県	Chiba (Ichihara)	0.031
13	3/21 01:00 ~ 02:00	東京都	Tokyo (Shinjuku-ku	0.051
14	3/21 01:00 ~ 02:00	神奈川県	Kanagawa (Chigasa	0.046
15	3/21 01:00 ~ 02:00	新潟県	Niigata (Niigata)	0.05
16	3/21 01:00 ~ 02:00	富山県	Toyama (Imizu)	0.05

17	3/21 01:00 ~ 02:00	石川県	Ishikawa (Kanazawa	0.055
18	3/21 01:00 ~ 02:00	福井県	Fukui (Fukui)	0.054
19	3/21 01:00 ~ 02:00	山梨県	Yamanashi (Kofu)	0.044
20	3/21 01:00 ~ 02:00	長野県	Nagano (Nagano)	0.06
21	3/21 01:00 ~ 02:00	岐阜県	Gifu (Kakamigahara	0.064
22	3/21 01:00 ~ 02:00	静岡県	Shizuoka (Shizuoka	0.034
23	3/21 01:00 ~ 02:00	愛知県	Aichi (Nagoya)	0.041
24	3/21 01:00 ~ 02:00	三重県	Mie (Yokkaichi)	0.051
25	3/21 01:00 ~ 02:00	滋賀県	Shiga (Ohtsu)	0.035
26	3/21 01:00 ~ 02:00	京都府	Kyoto (Kyoto)	0.039
27	3/21 01:00 ~ 02:00	大阪府	Osaka (Osaka)	0.043
28	3/21 01:00 ~ 02:00	兵庫県	Hyogo (Kobe)	0.037
29	3/21 01:00 ~ 02:00	奈良県	Nara (Nara)	0.05
30	3/21 01:00 ~ 02:00	和歌山県	Wakayama (Wakaya	0.034
31	3/21 01:00 ~ 02:00	鳥取県	Tottori (Touhaku-g	0.07
32	3/21 01:00 ~ 02:00	島根県	Shimane (Matsue)	0.042
33	3/21 01:00 ~ 02:00	岡山県	Okayama (Okayama	0.052
34	3/21 01:00 ~ 02:00	広島県	Hiroshima (Hiroshin	0.053
35	3/21 01:00 ~ 02:00	山口県	Yamaguchi (Yamagı	0.091
36	3/21 01:00 ~ 02:00	徳島県	Tokushima (Tokush	0.038
37	3/21 01:00 ~ 02:00	香川県	Kagawa (Takamatsı	0.055
38	3/21 01:00 ~ 02:00	愛媛県	Ehime (Matsuyama)	0.049
39	3/21 01:00 ~ 02:00	高知県	Kochi (Kochi)	0.029
40	3/21 01:00 ~ 02:00	福岡県	Fukuoka (Dazaifu)	0.036
41	3/21 01:00 ~ 02:00	佐賀県	Saga (Saga)	0.04
42	3/21 01:00 ~ 02:00	長崎県	Nagasaki (Ohmura)	0.029
43	3/21 01:00 ~ 02:00	熊本県	Kumamoto (Uto)	0.027
44	3/21 01:00 ~ 02:00	大分県	Oita (Oita)	0.05
45	3/21 01:00 ~ 02:00	宮崎県	Miyazaki (Miyazaki)	0.026
46	3/21 01:00 ~ 02:00	鹿児島県	Kagoshima (Kagosh	0.034
47	3/21 01:00 ~ 02:00	沖縄県	Okinawa (Uruma)	0.021
1	3/21 02:00 ~ 03:00	北海道	Hokkaido (Sapporo)	0.029
2	3/21 02:00 ~ 03:00	青森県	Aomori (Aomori)	0.022
3	3/21 02:00 ~ 03:00	岩手県	Iwate (Morioka)	0.036
4	3/21 02:00 ~ 03:00	宮城県	Miyagi (Sendai)	
5	3/21 02:00 ~ 03:00	秋田県	Akita (Akita)	0.036
6	3/21 02:00 ~ 03:00	山形県	Yamagata (Yamaga	0.114
7	3/21 02:00 ~ 03:00	福島県	Fukushima (Futaba-gun)	
8	3/21 02:00 ~ 03:00	茨城県	Ibaraki (Mito)	0.169
9	3/21 02:00 ~ 03:00	栃木県	Tochigi (Itsunomiya	0.15
10	3/21 02:00 ~ 03:00	群馬県	Gunma (Maebashi)	0.076
11	3/21 02:00 ~ 03:00	埼玉県	Saitama (Saitama)	0.065
12	3/21 02:00 ~ 03:00	千葉県	Chiba (Ichihara)	0.031
13	3/21 02:00 ~ 03:00	東京都	Tokyo (Shinjuku-kı	0.05
14	3/21 02:00 ~ 03:00	神奈川県	Kanagawa (Chigasa	0.046
15	3/21 02:00 ~ 03:00	新潟県	Niigata (Niigata)	0.048
16	3/21 02:00 ~ 03:00	富山県	Toyama (Imizu)	0.052
17	3/21 02:00 ~ 03:00	石川県	Ishikawa (Kanazawa	0.059
18	3/21 02:00 ~ 03:00	福井県	Fukui (Fukui)	0.059
19	3/21 02:00 ~ 03:00	山梨県	Yamanashi (Kofu)	0.045
20	3/21 02:00 ~ 03:00	長野県	Nagano (Nagano)	0.059
21	3/21 02:00 ~ 03:00	岐阜県	Gifu (Kakamigahara	0.064
22	3/21 02:00 ~ 03:00	静岡県	Shizuoka (Shizuoka	0.034
23	3/21 02:00 ~ 03:00	愛知県	Aichi (Nagoya)	0.042
24	3/21 02:00 ~ 03:00	三重県	Mie (Yokkaichi)	0.05
25	3/21 02:00 ~ 03:00	滋賀県	Shiga (Ohtsu)	0.038
26	3/21 02:00 ~ 03:00	京都府	Kyoto (Kyoto)	0.043

27	3/21 02:00 ~ 03:00	大阪府	Osaka (Osaka)	0.046
28	3/21 02:00 ~ 03:00	兵庫県	Hyogo (Kobe)	0.039
29	3/21 02:00 ~ 03:00	奈良県	Nara (Nara)	0.051
30	3/21 02:00 ~ 03:00	和歌山県	Wakayama (Wakaya	0.035
31	3/21 02:00 ~ 03:00	鳥取県	Tottori (Touhaku-g	0.067
32	3/21 02:00 ~ 03:00	島根県	Shimane (Matsue)	0.04
33	3/21 02:00 ~ 03:00	岡山県	Okayama (Okayama	0.054
34	3/21 02:00 ~ 03:00	広島県	Hiroshima (Hiroshin	0.053
35	3/21 02:00 ~ 03:00	山口県	Yamaguchi (Yamagı	0.091
36	3/21 02:00 ~ 03:00	徳島県	Tokushima (Tokush	0.039
37	3/21 02:00 ~ 03:00	香川県	Kagawa (Takamatsı	0.056
38	3/21 02:00 ~ 03:00	愛媛県	Ehime (Matsuyama	0.051
39	3/21 02:00 ~ 03:00	高知県	Kochi (Kochi)	0.028
40	3/21 02:00 ~ 03:00	福岡県	Fukuoka (Dazaifu)	0.037
41	3/21 02:00 ~ 03:00	佐賀県	Saga (Saga)	0.039
42	3/21 02:00 ~ 03:00	長崎県	Nagasaki (Ohmura)	0.029
43	3/21 02:00 ~ 03:00	熊本県	Kumamoto (Uto)	0.026
44	3/21 02:00 ~ 03:00	大分県	Oita (Oita)	0.05
45	3/21 02:00 ~ 03:00	宮崎県	Miyazaki (Miyazaki)	0.026
46	3/21 02:00 ~ 03:00	鹿児島県	Kagoshima (Kagosh	0.034
47	3/21 02:00 ~ 03:00	沖縄県	Okinawa (Uruma)	0.02
1	3/21 03:00 ~ 04:00	北海道	Hokkaido (Sapporo	0.028
2	3/21 03:00 ~ 04:00	青森県	Aomori (Aomori)	0.022
3	3/21 03:00 ~ 04:00	岩手県	Iwate (Morioka)	0.036
4	3/21 03:00 ~ 04:00	宮城県	Miyagi (Sendai)	
5	3/21 03:00 ~ 04:00	秋田県	Akita (Akita)	0.036
6	3/21 03:00 ~ 04:00	山形県	Yamagata (Yamaga	0.117
7	3/21 03:00 ~ 04:00	福島県	Fukushima (Futaba-gun)	
8	3/21 03:00 ~ 04:00	茨城県	Ibaraki (Mito)	0.169
9	3/21 03:00 ~ 04:00	栃木県	Tochigi (Itsunomiya	0.149
10	3/21 03:00 ~ 04:00	群馬県	Gunma (Maebashi)	0.075
11	3/21 03:00 ~ 04:00	埼玉県	Saitama (Saitama)	0.063
12	3/21 03:00 ~ 04:00	千葉県	Chiba (Ichihara)	0.031
13	3/21 03:00 ~ 04:00	東京都	Tokyo (Shinjuku-kı	0.05
14	3/21 03:00 ~ 04:00	神奈川県	Kanagawa (Chigasa	0.045
15	3/21 03:00 ~ 04:00	新潟県	Niigata (Niigata)	0.047
16	3/21 03:00 ~ 04:00	富山県	Toyama (Imizu)	0.053
17	3/21 03:00 ~ 04:00	石川県	Ishikawa (Kanazawa	0.062
18	3/21 03:00 ~ 04:00	福井県	Fukui (Fukui)	0.059
19	3/21 03:00 ~ 04:00	山梨県	Yamanashi (Kofu)	0.045
20	3/21 03:00 ~ 04:00	長野県	Nagano (Nagano)	0.061
21	3/21 03:00 ~ 04:00	岐阜県	Gifu (Kakamigahara	0.064
22	3/21 03:00 ~ 04:00	静岡県	Shizuoka (Shizuoka	0.034
23	3/21 03:00 ~ 04:00	愛知県	Aichi (Nagoya)	0.045
24	3/21 03:00 ~ 04:00	三重県	Mie (Yokkaichi)	0.052
25	3/21 03:00 ~ 04:00	滋賀県	Shiga (Ohtsu)	0.04
26	3/21 03:00 ~ 04:00	京都府	Kyoto (Kyoto)	0.025
27	3/21 03:00 ~ 04:00	大阪府	Osaka (Osaka)	0.047
28	3/21 03:00 ~ 04:00	兵庫県	Hyogo (Kobe)	0.04
29	3/21 03:00 ~ 04:00	奈良県	Nara (Nara)	0.052
30	3/21 03:00 ~ 04:00	和歌山県	Wakayama (Wakaya	0.034
31	3/21 03:00 ~ 04:00	鳥取県	Tottori (Touhaku-g	0.068
32	3/21 03:00 ~ 04:00	島根県	Shimane (Matsue)	0.04
33	3/21 03:00 ~ 04:00	岡山県	Okayama (Okayama	0.055
34	3/21 03:00 ~ 04:00	広島県	Hiroshima (Hiroshin	0.05
35	3/21 03:00 ~ 04:00	山口県	Yamaguchi (Yamagı	0.093
36	3/21 03:00 ~ 04:00	徳島県	Tokushima (Tokush	0.039

37	3/21 03:00 ~ 04:00	香川県	Kagawa (Takamatsı	0.056
38	3/21 03:00 ~ 04:00	愛媛県	Ehime (Matsuyama.	0.052
39	3/21 03:00 ~ 04:00	高知県	Kochi (Kochi)	0.028
40	3/21 03:00 ~ 04:00	福岡県	Fukuoka (Dazaifu)	0.038
41	3/21 03:00 ~ 04:00	佐賀県	Saga (Saga)	0.04
42	3/21 03:00 ~ 04:00	長崎県	Nagasaki (Ohmura)	0.029
43	3/21 03:00 ~ 04:00	熊本県	Kumamoto (Uto)	0.026
44	3/21 03:00 ~ 04:00	大分県	Oita (Oita)	0.05
45	3/21 03:00 ~ 04:00	宮崎県	Miyazaki (Miyazaki)	0.026
46	3/21 03:00 ~ 04:00	鹿児島県	Kagoshima (Kagosh	0.034
47	3/21 03:00 ~ 04:00	沖縄県	Okinawa (Uruma)	0.021
1	3/21 04:00 ~ 05:00	北海道	Hokkaido (Sapporo.	0.028
2	3/21 04:00 ~ 05:00	青森県	Aomori (Aomori)	0.022
3	3/21 04:00 ~ 05:00	岩手県	Iwate (Morioka)	0.036
4	3/21 04:00 ~ 05:00	宮城県	Miyagi (Sendai)	
5	3/21 04:00 ~ 05:00	秋田県	Akita (Akita)	0.035
6	3/21 04:00 ~ 05:00	山形県	Yamagata (Yamaga	0.113
7	3/21 04:00 ~ 05:00	福島県	Fukushima (Futaba-gun)	
8	3/21 04:00 ~ 05:00	茨城県	Ibaraki (Mito)	0.169
9	3/21 04:00 ~ 05:00	栃木県	Tochigi (Itsunomiya	0.148
10	3/21 04:00 ~ 05:00	群馬県	Gunma (Maebashi)	0.075
11	3/21 04:00 ~ 05:00	埼玉県	Saitama (Saitama)	0.063
12	3/21 04:00 ~ 05:00	千葉県	Chiba (Ichihara)	0.031
13	3/21 04:00 ~ 05:00	東京都	Tokyo (Shinjuku-ku	0.051
14	3/21 04:00 ~ 05:00	神奈川県	Kanagawa (Chigasa	0.044
15	3/21 04:00 ~ 05:00	新潟県	Niigata (Niigata)	0.048
16	3/21 04:00 ~ 05:00	富山県	Toyama (Imizu)	0.061
17	3/21 04:00 ~ 05:00	石川県	Ishikawa (Kanazawa	0.061
18	3/21 04:00 ~ 05:00	福井県	Fukui (Fukui)	0.057
19	3/21 04:00 ~ 05:00	山梨県	Yamanashi (Kofu)	0.045
20	3/21 04:00 ~ 05:00	長野県	Nagano (Nagano)	0.064
21	3/21 04:00 ~ 05:00	岐阜県	Gifu (Kakamigahara	0.066
22	3/21 04:00 ~ 05:00	静岡県	Shizuoka (Shizuoka	0.035
23	3/21 04:00 ~ 05:00	愛知県	Aichi (Nagoya)	0.045
24	3/21 04:00 ~ 05:00	三重県	Mie (Yokkaichi)	0.053
25	3/21 04:00 ~ 05:00	滋賀県	Shiga (Ohtsu)	0.042
26	3/21 04:00 ~ 05:00	京都府	Kyoto (Kyoto)	0.049
27	3/21 04:00 ~ 05:00	大阪府	Osaka (Osaka)	0.049
28	3/21 04:00 ~ 05:00	兵庫県	Hyogo (Kobe)	0.041
29	3/21 04:00 ~ 05:00	奈良県	Nara (Nara)	0.052
30	3/21 04:00 ~ 05:00	和歌山県	Wakayama (Wakaya	0.032
31	3/21 04:00 ~ 05:00	鳥取県	Tottori (Touhaku-g	0.068
32	3/21 04:00 ~ 05:00	島根県	Shimane (Matsue)	0.041
33	3/21 04:00 ~ 05:00	岡山県	Okayama (Okayama	0.053
34	3/21 04:00 ~ 05:00	広島県	Hiroshima (Hiroshin	0.051
35	3/21 04:00 ~ 05:00	山口県	Yamaguchi (Yamagı	0.097
36	3/21 04:00 ~ 05:00	徳島県	Tokushima (Tokush	0.038
37	3/21 04:00 ~ 05:00	香川県	Kagawa (Takamatsı	0.058
38	3/21 04:00 ~ 05:00	愛媛県	Ehime (Matsuyama.	0.052
39	3/21 04:00 ~ 05:00	高知県	Kochi (Kochi)	0.027
40	3/21 04:00 ~ 05:00	福岡県	Fukuoka (Dazaifu)	0.038
41	3/21 04:00 ~ 05:00	佐賀県	Saga (Saga)	0.039
42	3/21 04:00 ~ 05:00	長崎県	Nagasaki (Ohmura)	0.029
43	3/21 04:00 ~ 05:00	熊本県	Kumamoto (Uto)	0.026
44	3/21 04:00 ~ 05:00	大分県	Oita (Oita)	0.05
45	3/21 04:00 ~ 05:00	宮崎県	Miyazaki (Miyazaki)	0.026
46	3/21 04:00 ~ 05:00	鹿児島県	Kagoshima (Kagosh	0.034

47	3/21 04:00 ~ 05:00	沖縄県	Okinawa (Uruma)	0.021
1	3/21 05:00 ~ 06:00	北海道	Hokkaido (Sapporo)	0.028
2	3/21 05:00 ~ 06:00	青森県	Aomori (Aomori)	0.022
3	3/21 05:00 ~ 06:00	岩手県	Iwate (Morioka)	0.036
4	3/21 05:00 ~ 06:00	宮城県	Miyagi (Sendai)	
5	3/21 05:00 ~ 06:00	秋田県	Akita (Akita)	0.035
6	3/21 05:00 ~ 06:00	山形県	Yamagata (Yamaga	0.113
7	3/21 05:00 ~ 06:00	福島県	Fukushima (Futaba-gun)	
8	3/21 05:00 ~ 06:00	茨城県	Ibaraki (Mito)	0.256
9	3/21 05:00 ~ 06:00	栃木県	Tochigi (Itsunomiya	0.147
10	3/21 05:00 ~ 06:00	群馬県	Gunma (Maebashi)	0.075
11	3/21 05:00 ~ 06:00	埼玉県	Saitama (Saitama)	0.064
12	3/21 05:00 ~ 06:00	千葉県	Chiba (Ichihara)	0.03
13	3/21 05:00 ~ 06:00	東京都	Tokyo (Shinjuku-ku	0.052
14	3/21 05:00 ~ 06:00	神奈川県	Kanagawa (Chigasa	0.046
15	3/21 05:00 ~ 06:00	新潟県	Niigata (Niigata)	0.047
16	3/21 05:00 ~ 06:00	富山県	Toyama (Imizu)	0.064
17	3/21 05:00 ~ 06:00	石川県	Ishikawa (Kanazawa	0.058
18	3/21 05:00 ~ 06:00	福井県	Fukui (Fukui)	0.055
19	3/21 05:00 ~ 06:00	山梨県	Yamanashi (Kofu)	0.045
20	3/21 05:00 ~ 06:00	長野県	Nagano (Nagano)	0.066
21	3/21 05:00 ~ 06:00	岐阜県	Gifu (Kakamigahara	0.065
22	3/21 05:00 ~ 06:00	静岡県	Shizuoka (Shizuoka	0.037
23	3/21 05:00 ~ 06:00	愛知県	Aichi (Nagoya)	0.046
24	3/21 05:00 ~ 06:00	三重県	Mie (Yokkaichi)	0.052
25	3/21 05:00 ~ 06:00	滋賀県	Shiga (Ohtsu)	0.042
26	3/21 05:00 ~ 06:00	京都府	Kyoto (Kyoto)	0.053
27	3/21 05:00 ~ 06:00	大阪府	Osaka (Osaka)	0.051
28	3/21 05:00 ~ 06:00	兵庫県	Hyogo (Kobe)	0.043
29	3/21 05:00 ~ 06:00	奈良県	Nara (Nara)	0.054
30	3/21 05:00 ~ 06:00	和歌山県	Wakayama (Wakaya	0.031
31	3/21 05:00 ~ 06:00	鳥取県	Tottori (Touhaku-g	0.072
32	3/21 05:00 ~ 06:00	島根県	Shimane (Matsue)	0.042
33	3/21 05:00 ~ 06:00	岡山県	Okayama (Okayama	0.053
34	3/21 05:00 ~ 06:00	広島県	Hiroshima (Hiroshin	0.055
35	3/21 05:00 ~ 06:00	山口県	Yamaguchi (Yamagu	0.103
36	3/21 05:00 ~ 06:00	徳島県	Tokushima (Tokush	0.038
37	3/21 05:00 ~ 06:00	香川県	Kagawa (Takamatsu	0.06
38	3/21 05:00 ~ 06:00	愛媛県	Ehime (Matsuyama)	0.05
39	3/21 05:00 ~ 06:00	高知県	Kochi (Kochi)	0.027
40	3/21 05:00 ~ 06:00	福岡県	Fukuoka (Dazaifu)	0.039
41	3/21 05:00 ~ 06:00	佐賀県	Saga (Saga)	0.042
42	3/21 05:00 ~ 06:00	長崎県	Nagasaki (Ohmura)	0.032
43	3/21 05:00 ~ 06:00	熊本県	Kumamoto (Uto)	0.026
44	3/21 05:00 ~ 06:00	大分県	Oita (Oita)	0.05
45	3/21 05:00 ~ 06:00	宮崎県	Miyazaki (Miyazaki)	0.026
46	3/21 05:00 ~ 06:00	鹿児島県	Kagoshima (Kagosh	0.034
47	3/21 05:00 ~ 06:00	沖縄県	Okinawa (Uruma)	0.021
1	3/21 06:00 ~ 07:00	北海道	Hokkaido (Sapporo)	0.028
2	3/21 06:00 ~ 07:00	青森県	Aomori (Aomori)	0.022
3	3/21 06:00 ~ 07:00	岩手県	Iwate (Morioka)	0.036
4	3/21 06:00 ~ 07:00	宮城県	Miyagi (Sendai)	
5	3/21 06:00 ~ 07:00	秋田県	Akita (Akita)	0.035
6	3/21 06:00 ~ 07:00	山形県	Yamagata (Yamaga	0.111
7	3/21 06:00 ~ 07:00	福島県	Fukushima (Futaba-gun)	
8	3/21 06:00 ~ 07:00	茨城県	Ibaraki (Mito)	0.493
9	3/21 06:00 ~ 07:00	栃木県	Tochigi (Itsunomiya	0.147

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10	3/21 06:00 ~ 07:00	群馬県	Gunma (Maebashi)	0.075
11	3/21 06:00 ~ 07:00	埼玉県	Saitama (Saitama)	0.068
12	3/21 06:00 ~ 07:00	千葉県	Chiba (Ichihara)	0.03
13	3/21 06:00 ~ 07:00	東京都	Tokyo (Shinjuku-kι	0.054
14	3/21 06:00 ~ 07:00	神奈川県	Kanagawa (Chigasa	0.049
15	3/21 06:00 ~ 07:00	新潟県	Niigata (Niigata)	0.05
16	3/21 06:00 ~ 07:00	富山県	Toyama (Imizu)	0.066
17	3/21 06:00 ~ 07:00	石川県	Ishikawa (Kanazawa	0.057
18	3/21 06:00 ~ 07:00	福井県	Fukui (Fukui)	0.054
19	3/21 06:00 ~ 07:00	山梨県	Yamanashi (Kofu)	0.046
20	3/21 06:00 ~ 07:00	長野県	Nagano (Nagano)	0.066
21	3/21 06:00 ~ 07:00	岐阜県	Gifu (Kakamigahara	0.065
22	3/21 06:00 ~ 07:00	静岡県	Shizuoka (Shizuoka	0.04
23	3/21 06:00 ~ 07:00	愛知県	Aichi (Nagoya)	0.045
24	3/21 06:00 ~ 07:00	三重県	Mie (Yokkaichi)	0.05
25	3/21 06:00 ~ 07:00	滋賀県	Shiga (Ohtsu)	0.041
26	3/21 06:00 ~ 07:00	京都府	Kyoto (Kyoto)	0.051
27	3/21 06:00 ~ 07:00	大阪府	Osaka (Osaka)	0.051
28	3/21 06:00 ~ 07:00	兵庫県	Hyogo (Kobe)	0.043
29	3/21 06:00 ~ 07:00	奈良県	Nara (Nara)	0.053
30	3/21 06:00 ~ 07:00	和歌山県	Wakayama (Wakaya	0.032
31	3/21 06:00 ~ 07:00	鳥取県	Tottori (Touhaku-g	0.075
32	3/21 06:00 ~ 07:00	島根県	Shimane (Matsue)	0.042
33	3/21 06:00 ~ 07:00	岡山県	Okayama (Okayama	0.055
34	3/21 06:00 ~ 07:00	広島県	Hiroshima (Hiroshin	0.054
35	3/21 06:00 ~ 07:00	山口県	Yamaguchi (Yamagι	0.096
36	3/21 06:00 ~ 07:00	徳島県	Tokushima (Tokush	0.039
37	3/21 06:00 ~ 07:00	香川県	Kagawa (Takamatsι	0.06
38	3/21 06:00 ~ 07:00	愛媛県	Ehime (Matsuyama)	0.052
39	3/21 06:00 ~ 07:00	高知県	Kochi (Kochi)	0.028
40	3/21 06:00 ~ 07:00	福岡県	Fukuoka (Dazaifu)	0.043
41	3/21 06:00 ~ 07:00	佐賀県	Saga (Saga)	0.056
42	3/21 06:00 ~ 07:00	長崎県	Nagasaki (Ohmura)	0.034
43	3/21 06:00 ~ 07:00	熊本県	Kumamoto (Uto)	0.026
44	3/21 06:00 ~ 07:00	大分県	Oita (Oita)	0.049
45	3/21 06:00 ~ 07:00	宮崎県	Miyazaki (Miyazaki)	0.026
46	3/21 06:00 ~ 07:00	鹿児島県	Kagoshima (Kagosh	0.034
47	3/21 06:00 ~ 07:00	沖縄県	Okinawa (Uruma)	0.021
1	3/21 07:00 ~ 08:00	北海道	Hokkaido (Sapporo)	0.028
2	3/21 07:00 ~ 08:00	青森県	Aomori (Aomori)	0.022
3	3/21 07:00 ~ 08:00	岩手県	Iwate (Morioka)	0.037
4	3/21 07:00 ~ 08:00	宮城県	Miyagi (Sendai)	
5	3/21 07:00 ~ 08:00	秋田県	Akita (Akita)	0.035
6	3/21 07:00 ~ 08:00	山形県	Yamagata (Yamaga	0.111
7	3/21 07:00 ~ 08:00	福島県	Fukushima (Futaba-gun)	
8	3/21 07:00 ~ 08:00	茨城県	Ibaraki (Mito)	0.452
9	3/21 07:00 ~ 08:00	栃木県	Tochigi (Itsunomiya	0.146
10	3/21 07:00 ~ 08:00	群馬県	Gunma (Maebashi)	0.073
11	3/21 07:00 ~ 08:00	埼玉県	Saitama (Saitama)	0.074
12	3/21 07:00 ~ 08:00	千葉県	Chiba (Ichihara)	0.036
13	3/21 07:00 ~ 08:00	東京都	Tokyo (Shinjuku-kι	0.059
14	3/21 07:00 ~ 08:00	神奈川県	Kanagawa (Chigasa	0.063
15	3/21 07:00 ~ 08:00	新潟県	Niigata (Niigata)	0.053
16	3/21 07:00 ~ 08:00	富山県	Toyama (Imizu)	0.063
17	3/21 07:00 ~ 08:00	石川県	Ishikawa (Kanazawa	0.052
18	3/21 07:00 ~ 08:00	福井県	Fukui (Fukui)	0.051
19	3/21 07:00 ~ 08:00	山梨県	Yamanashi (Kofu)	0.047

20	3/21 07:00 ~ 08:00	長野県	Nagano (Nagano)	0.065
21	3/21 07:00 ~ 08:00	岐阜県	Gifu (Kakamigahara	0.066
22	3/21 07:00 ~ 08:00	静岡県	Shizuoka (Shizuoka	0.04
23	3/21 07:00 ~ 08:00	愛知県	Aichi (Nagoya)	0.044
24	3/21 07:00 ~ 08:00	三重県	Mie (Yokkaichi)	0.05
25	3/21 07:00 ~ 08:00	滋賀県	Shiga (Ohtsu)	0.039
26	3/21 07:00 ~ 08:00	京都府	Kyoto (Kyoto)	0.047
27	3/21 07:00 ~ 08:00	大阪府	Osaka (Osaka)	0.05
28	3/21 07:00 ~ 08:00	兵庫県	Hyogo (Kobe)	0.042
29	3/21 07:00 ~ 08:00	奈良県	Nara (Nara)	0.056
30	3/21 07:00 ~ 08:00	和歌山県	Wakayama (Wakaya	0.034
31	3/21 07:00 ~ 08:00	鳥取県	Tottori (Touhaku-g	0.073
32	3/21 07:00 ~ 08:00	島根県	Shimane (Matsue)	0.042
33	3/21 07:00 ~ 08:00	岡山県	Okayama (Okayama	0.053
34	3/21 07:00 ~ 08:00	広島県	Hiroshima (Hiroshin	0.054
35	3/21 07:00 ~ 08:00	山口県	Yamaguchi (Yamagı	0.095
36	3/21 07:00 ~ 08:00	徳島県	Tokushima (Tokush	0.039
37	3/21 07:00 ~ 08:00	香川県	Kagawa (Takamatsı	0.059
38	3/21 07:00 ~ 08:00	愛媛県	Ehime (Matsuyama)	0.056
39	3/21 07:00 ~ 08:00	高知県	Kochi (Kochi)	0.028
40	3/21 07:00 ~ 08:00	福岡県	Fukuoka (Dazaifu)	0.049
41	3/21 07:00 ~ 08:00	佐賀県	Saga (Saga)	0.059
42	3/21 07:00 ~ 08:00	長崎県	Nagasaki (Ohmura)	0.036
43	3/21 07:00 ~ 08:00	熊本県	Kumamoto (Uto)	0.027
44	3/21 07:00 ~ 08:00	大分県	Oita (Oita)	0.05
45	3/21 07:00 ~ 08:00	宮崎県	Miyazaki (Miyazaki)	0.027
46	3/21 07:00 ~ 08:00	鹿児島県	Kagoshima (Kagosh	0.034
47	3/21 07:00 ~ 08:00	沖縄県	Okinawa (Uruma)	0.021
1	3/21 08:00 ~ 09:00	北海道	Hokkaido (Sapporo)	0.028
2	3/21 08:00 ~ 09:00	青森県	Aomori (Aomori)	0.021
3	3/21 08:00 ~ 09:00	岩手県	Iwate (Morioka)	0.037
4	3/21 08:00 ~ 09:00	宮城県	Miyagi (Sendai)	
5	3/21 08:00 ~ 09:00	秋田県	Akita (Akita)	0.035
6	3/21 08:00 ~ 09:00	山形県	Yamagata (Yamaga	0.111
7	3/21 08:00 ~ 09:00	福島県	Fukushima (Futaba-gun)	
8	3/21 08:00 ~ 09:00	茨城県	Ibaraki (Mito)	0.394
9	3/21 08:00 ~ 09:00	栃木県	Tochigi (Itsunomiya	0.145
10	3/21 08:00 ~ 09:00	群馬県	Gunma (Maebashi)	0.073
11	3/21 08:00 ~ 09:00	埼玉県	Saitama (Saitama)	0.079
12	3/21 08:00 ~ 09:00	千葉県	Chiba (Ichihara)	0.041
13	3/21 08:00 ~ 09:00	東京都	Tokyo (Shinjuku-kı	0.07
14	3/21 08:00 ~ 09:00	神奈川県	Kanagawa (Chigasa	0.073
15	3/21 08:00 ~ 09:00	新潟県	Niigata (Niigata)	0.054
16	3/21 08:00 ~ 09:00	富山県	Toyama (Imizu)	0.059
17	3/21 08:00 ~ 09:00	石川県	Ishikawa (Kanazawa	0.054
18	3/21 08:00 ~ 09:00	福井県	Fukui (Fukui)	0.048
19	3/21 08:00 ~ 09:00	山梨県	Yamanashi (Kofu)	0.048
20	3/21 08:00 ~ 09:00	長野県	Nagano (Nagano)	0.063
21	3/21 08:00 ~ 09:00	岐阜県	Gifu (Kakamigahara	0.065
22	3/21 08:00 ~ 09:00	静岡県	Shizuoka (Shizuoka	0.041
23	3/21 08:00 ~ 09:00	愛知県	Aichi (Nagoya)	0.044
24	3/21 08:00 ~ 09:00	三重県	Mie (Yokkaichi)	0.048
25	3/21 08:00 ~ 09:00	滋賀県	Shiga (Ohtsu)	0.038
26	3/21 08:00 ~ 09:00	京都府	Kyoto (Kyoto)	0.045
27	3/21 08:00 ~ 09:00	大阪府	Osaka (Osaka)	0.048
28	3/21 08:00 ~ 09:00	兵庫県	Hyogo (Kobe)	0.039
29	3/21 08:00 ~ 09:00	奈良県	Nara (Nara)	0.055

30	3/21 08:00 ~ 09:00	和歌山県	Wakayama (Wakaya	0.033
31	3/21 08:00 ~ 09:00	鳥取県	Tottori (Touhaku-g	0.071
32	3/21 08:00 ~ 09:00	島根県	Shimane (Matsue)	0.04
33	3/21 08:00 ~ 09:00	岡山県	Okayama (Okayama	0.058
34	3/21 08:00 ~ 09:00	広島県	Hiroshima (Hiroshin	0.056
35	3/21 08:00 ~ 09:00	山口県	Yamaguchi (Yamagi	0.099
36	3/21 08:00 ~ 09:00	徳島県	Tokushima (Tokush	0.039
37	3/21 08:00 ~ 09:00	香川県	Kagawa (Takamatsu	0.058
38	3/21 08:00 ~ 09:00	愛媛県	Ehime (Matsuyama,	0.054
39	3/21 08:00 ~ 09:00	高知県	Kochi (Kochi)	0.028
40	3/21 08:00 ~ 09:00	福岡県	Fukuoka (Dazaifu)	0.045
41	3/21 08:00 ~ 09:00	佐賀県	Saga (Saga)	0.053
42	3/21 08:00 ~ 09:00	長崎県	Nagasaki (Ohmura)	0.033
43	3/21 08:00 ~ 09:00	熊本県	Kumamoto (Uto)	0.029
44	3/21 08:00 ~ 09:00	大分県	Oita (Oita)	0.05
45	3/21 08:00 ~ 09:00	宮崎県	Miyazaki (Miyazaki)	0.026
46	3/21 08:00 ~ 09:00	鹿児島県	Kagoshima (Kagosh	0.035
47	3/21 08:00 ~ 09:00	沖縄県	Okinawa (Uruma)	0.02
1	3/21 09:00 ~ 10:00	北海道	Hokkaido (Sapporo)	0.028
2	3/21 09:00 ~ 10:00	青森県	Aomori (Aomori)	0.021
3	3/21 09:00 ~ 10:00	岩手県	Iwate (Morioka)	0.035
4	3/21 09:00 ~ 10:00	宮城県	Miyagi (Sendai)	
5	3/21 09:00 ~ 10:00	秋田県	Akita (Akita)	0.035
6	3/21 09:00 ~ 10:00	山形県	Yamagata (Yamaga	0.108
7	3/21 09:00 ~ 10:00	福島県	Fukushima (Futaba-gun)	
8	3/21 09:00 ~ 10:00	茨城県	Ibaraki (Mito)	0.438
9	3/21 09:00 ~ 10:00	栃木県	Tochigi (Itsunomiya	0.14
10	3/21 09:00 ~ 10:00	群馬県	Gunma (Maebashi)	0.069
11	3/21 09:00 ~ 10:00	埼玉県	Saitama (Saitama)	0.085
12	3/21 09:00 ~ 10:00	千葉県	Chiba (Ichihara)	0.091
13	3/21 09:00 ~ 10:00	東京都	Tokyo (Shinjuku-ku	0.096
14	3/21 09:00 ~ 10:00	神奈川県	Kanagawa (Chigasa	0.077
15	3/21 09:00 ~ 10:00	新潟県	Niigata (Niigata)	0.051
16	3/21 09:00 ~ 10:00	富山県	Toyama (Imizu)	0.056
17	3/21 09:00 ~ 10:00	石川県	Ishikawa (Kanazawa	0.052
18	3/21 09:00 ~ 10:00	福井県	Fukui (Fukui)	0.046
19	3/21 09:00 ~ 10:00	山梨県	Yamanashi (Kofu)	0.048
20	3/21 09:00 ~ 10:00	長野県	Nagano (Nagano)	0.061
21	3/21 09:00 ~ 10:00	岐阜県	Gifu (Kakamigahara	0.063
22	3/21 09:00 ~ 10:00	静岡県	Shizuoka (Shizuoka	0.041
23	3/21 09:00 ~ 10:00	愛知県	Aichi (Nagoya)	0.043
24	3/21 09:00 ~ 10:00	三重県	Mie (Yokkaichi)	0.047
25	3/21 09:00 ~ 10:00	滋賀県	Shiga (Ohtsu)	0.036
26	3/21 09:00 ~ 10:00	京都府	Kyoto (Kyoto)	0.041
27	3/21 09:00 ~ 10:00	大阪府	Osaka (Osaka)	0.046
28	3/21 09:00 ~ 10:00	兵庫県	Hyogo (Kobe)	0.04
29	3/21 09:00 ~ 10:00	奈良県	Nara (Nara)	0.052
30	3/21 09:00 ~ 10:00	和歌山県	Wakayama (Wakaya	0.033
31	3/21 09:00 ~ 10:00	鳥取県	Tottori (Touhaku-g	0.072
32	3/21 09:00 ~ 10:00	島根県	Shimane (Matsue)	0.037
33	3/21 09:00 ~ 10:00	岡山県	Okayama (Okayama	0.055
34	3/21 09:00 ~ 10:00	広島県	Hiroshima (Hiroshin	0.059
35	3/21 09:00 ~ 10:00	山口県	Yamaguchi (Yamagi	0.1
36	3/21 09:00 ~ 10:00	徳島県	Tokushima (Tokush	0.039
37	3/21 09:00 ~ 10:00	香川県	Kagawa (Takamatsu	0.06
38	3/21 09:00 ~ 10:00	愛媛県	Ehime (Matsuyama,	0.053
39	3/21 09:00 ~ 10:00	高知県	Kochi (Kochi)	0.028

40	3/21 09:00 ~ 10:00	福岡県	Fukuoka (Dazaifu)	0.041
41	3/21 09:00 ~ 10:00	佐賀県	Saga (Saga)	0.043
42	3/21 09:00 ~ 10:00	長崎県	Nagasaki (Ohmura)	0.031
43	3/21 09:00 ~ 10:00	熊本県	Kumamoto (Uto)	0.03
44	3/21 09:00 ~ 10:00	大分県	Oita (Oita)	0.051
45	3/21 09:00 ~ 10:00	宮崎県	Miyazaki (Miyazaki)	0.026
46	3/21 09:00 ~ 10:00	鹿児島県	Kagoshima (Kagosh	0.034
47	3/21 09:00 ~ 10:00	沖縄県	Okinawa (Uruma)	0.021
1	3/21 10:00 ~ 11:00	北海道	Hokkaido (Sapporo)	0.027
2	3/21 10:00 ~ 11:00	青森県	Aomori (Aomori)	0.022
3	3/21 10:00 ~ 11:00	岩手県	Iwate (Morioka)	0.034
4	3/21 10:00 ~ 11:00	宮城県	Miyagi (Sendai)	
5	3/21 10:00 ~ 11:00	秋田県	Akita (Akita)	0.035
6	3/21 10:00 ~ 11:00	山形県	Yamagata (Yamaga	0.104
7	3/21 10:00 ~ 11:00	福島県	Fukushima (Futaba-gun)	
8	3/21 10:00 ~ 11:00	茨城県	Ibaraki (Mito)	0.33
9	3/21 10:00 ~ 11:00	栃木県	Tochigi (Itsunomiya	0.138
10	3/21 10:00 ~ 11:00	群馬県	Gunma (Maebashi)	0.067
11	3/21 10:00 ~ 11:00	埼玉県	Saitama (Saitama)	0.09
12	3/21 10:00 ~ 11:00	千葉県	Chiba (Ichihara)	0.074
13	3/21 10:00 ~ 11:00	東京都	Tokyo (Shinjuku-ku	0.1
14	3/21 10:00 ~ 11:00	神奈川県	Kanagawa (Chigasa	0.078
15	3/21 10:00 ~ 11:00	新潟県	Niigata (Niigata)	0.048
16	3/21 10:00 ~ 11:00	富山県	Toyama (Imizu)	0.051
17	3/21 10:00 ~ 11:00	石川県	Ishikawa (Kanazawa	0.049
18	3/21 10:00 ~ 11:00	福井県	Fukui (Fukui)	0.047
19	3/21 10:00 ~ 11:00	山梨県	Yamanashi (Kofu)	0.046
20	3/21 10:00 ~ 11:00	長野県	Nagano (Nagano)	0.059
21	3/21 10:00 ~ 11:00	岐阜県	Gifu (Kakamigahara	0.061
22	3/21 10:00 ~ 11:00	静岡県	Shizuoka (Shizuoka	0.036
23	3/21 10:00 ~ 11:00	愛知県	Aichi (Nagoya)	0.041
24	3/21 10:00 ~ 11:00	三重県	Mie (Yokkaichi)	0.046
25	3/21 10:00 ~ 11:00	滋賀県	Shiga (Ohtsu)	0.034
26	3/21 10:00 ~ 11:00	京都府	Kyoto (Kyoto)	0.039
27	3/21 10:00 ~ 11:00	大阪府	Osaka (Osaka)	0.045
28	3/21 10:00 ~ 11:00	兵庫県	Hyogo (Kobe)	0.039
29	3/21 10:00 ~ 11:00	奈良県	Nara (Nara)	0.05
30	3/21 10:00 ~ 11:00	和歌山県	Wakayama (Wakaya	0.032
31	3/21 10:00 ~ 11:00	鳥取県	Tottori (Touhaku-g	0.073
32	3/21 10:00 ~ 11:00	島根県	Shimane (Matsue)	0.037
33	3/21 10:00 ~ 11:00	岡山県	Okayama (Okayama	0.056
34	3/21 10:00 ~ 11:00	広島県	Hiroshima (Hiroshin	0.055
35	3/21 10:00 ~ 11:00	山口県	Yamaguchi (Yamagu	0.099
36	3/21 10:00 ~ 11:00	徳島県	Tokushima (Tokush	0.039
37	3/21 10:00 ~ 11:00	香川県	Kagawa (Takamatsu	0.062
38	3/21 10:00 ~ 11:00	愛媛県	Ehime (Matsuyama)	0.053
39	3/21 10:00 ~ 11:00	高知県	Kochi (Kochi)	0.028
40	3/21 10:00 ~ 11:00	福岡県	Fukuoka (Dazaifu)	0.042
41	3/21 10:00 ~ 11:00	佐賀県	Saga (Saga)	0.04
42	3/21 10:00 ~ 11:00	長崎県	Nagasaki (Ohmura)	0.03
43	3/21 10:00 ~ 11:00	熊本県	Kumamoto (Uto)	0.028
44	3/21 10:00 ~ 11:00	大分県	Oita (Oita)	0.051
45	3/21 10:00 ~ 11:00	宮崎県	Miyazaki (Miyazaki)	0.026
46	3/21 10:00 ~ 11:00	鹿児島県	Kagoshima (Kagosh	0.034
47	3/21 10:00 ~ 11:00	沖縄県	Okinawa (Uruma)	0.021
1	3/21 11:00 ~ 12:00	北海道	Hokkaido (Sapporo)	0.028
2	3/21 11:00 ~ 12:00	青森県	Aomori (Aomori)	0.021

3	3/21 11:00 ~ 12:00	岩手県	Iwate (Morioka)	0.035
4	3/21 11:00 ~ 12:00	宮城県	Miyagi (Sendai)	
5	3/21 11:00 ~ 12:00	秋田県	Akita (Akita)	0.035
6	3/21 11:00 ~ 12:00	山形県	Yamagata (Yamaga	0.103
7	3/21 11:00 ~ 12:00	福島県	Fukushima (Futaba-gun)	
8	3/21 11:00 ~ 12:00	茨城県	Ibaraki (Mito)	0.308
9	3/21 11:00 ~ 12:00	栃木県	Tochigi (Itsunomiya	0.133
10	3/21 11:00 ~ 12:00	群馬県	Gunma (Maebashi)	0.066
11	3/21 11:00 ~ 12:00	埼玉県	Saitama (Saitama)	0.087
12	3/21 11:00 ~ 12:00	千葉県	Chiba (Ichihara)	0.07
13	3/21 11:00 ~ 12:00	東京都	Tokyo (Shinjuku-ku	0.109
14	3/21 11:00 ~ 12:00	神奈川県	Kanagawa (Chigasa	0.076
15	3/21 11:00 ~ 12:00	新潟県	Niigata (Niigata)	0.047
16	3/21 11:00 ~ 12:00	富山県	Toyama (Imizu)	0.051
17	3/21 11:00 ~ 12:00	石川県	Ishikawa (Kanazawa	0.05
18	3/21 11:00 ~ 12:00	福井県	Fukui (Fukui)	0.049
19	3/21 11:00 ~ 12:00	山梨県	Yamanashi (Kofu)	0.045
20	3/21 11:00 ~ 12:00	長野県	Nagano (Nagano)	0.058
21	3/21 11:00 ~ 12:00	岐阜県	Gifu (Kakamigahara	0.06
22	3/21 11:00 ~ 12:00	静岡県	Shizuoka (Shizuoka	0.035
23	3/21 11:00 ~ 12:00	愛知県	Aichi (Nagoya)	0.04
24	3/21 11:00 ~ 12:00	三重県	Mie (Yokkaichi)	0.046
25	3/21 11:00 ~ 12:00	滋賀県	Shiga (Ohtsu)	0.034
26	3/21 11:00 ~ 12:00	京都府	Kyoto (Kyoto)	0.039
27	3/21 11:00 ~ 12:00	大阪府	Osaka (Osaka)	0.043
28	3/21 11:00 ~ 12:00	兵庫県	Hyogo (Kobe)	0.039
29	3/21 11:00 ~ 12:00	奈良県	Nara (Nara)	0.048
30	3/21 11:00 ~ 12:00	和歌山県	Wakayama (Wakaya	0.032
31	3/21 11:00 ~ 12:00	鳥取県	Tottori (Touhaku-g	0.074
32	3/21 11:00 ~ 12:00	島根県	Shimane (Matsue)	0.038
33	3/21 11:00 ~ 12:00	岡山県	Okayama (Okayama	0.056
34	3/21 11:00 ~ 12:00	広島県	Hiroshima (Hiroshin	0.057
35	3/21 11:00 ~ 12:00	山口県	Yamaguchi (Yamagu	0.1
36	3/21 11:00 ~ 12:00	徳島県	Tokushima (Tokush	0.038
37	3/21 11:00 ~ 12:00	香川県	Kagawa (Takamatsu	0.057
38	3/21 11:00 ~ 12:00	愛媛県	Ehime (Matsuyama)	0.054
39	3/21 11:00 ~ 12:00	高知県	Kochi (Kochi)	0.027
40	3/21 11:00 ~ 12:00	福岡県	Fukuoka (Dazaifu)	0.038
41	3/21 11:00 ~ 12:00	佐賀県	Saga (Saga)	0.04
42	3/21 11:00 ~ 12:00	長崎県	Nagasaki (Ohmura)	0.03
43	3/21 11:00 ~ 12:00	熊本県	Kumamoto (Uto)	0.028
44	3/21 11:00 ~ 12:00	大分県	Oita (Oita)	0.052
45	3/21 11:00 ~ 12:00	宮崎県	Miyazaki (Miyazaki)	0.027
46	3/21 11:00 ~ 12:00	鹿児島県	Kagoshima (Kagosh	0.034
47	3/21 11:00 ~ 12:00	沖縄県	Okinawa (Uruma)	0.02
1	3/21 12:00 ~ 13:00	北海道	Hokkaido (Sapporo)	0.028
2	3/21 12:00 ~ 13:00	青森県	Aomori (Aomori)	0.022
3	3/21 12:00 ~ 13:00	岩手県	Iwate (Morioka)	0.034
4	3/21 12:00 ~ 13:00	宮城県	Miyagi (Sendai)	
5	3/21 12:00 ~ 13:00	秋田県	Akita (Akita)	0.035
6	3/21 12:00 ~ 13:00	山形県	Yamagata (Yamaga	0.101
7	3/21 12:00 ~ 13:00	福島県	Fukushima (Futaba-gun)	
8	3/21 12:00 ~ 13:00	茨城県	Ibaraki (Mito)	0.31
9	3/21 12:00 ~ 13:00	栃木県	Tochigi (Itsunomiya	0.135
10	3/21 12:00 ~ 13:00	群馬県	Gunma (Maebashi)	0.068
11	3/21 12:00 ~ 13:00	埼玉県	Saitama (Saitama)	0.1
12	3/21 12:00 ~ 13:00	千葉県	Chiba (Ichihara)	0.074

13	3/21 12:00 ~ 13:00	東京都	Tokyo (Shinjuku-ku	0.113
14	3/21 12:00 ~ 13:00	神奈川県	Kanagawa (Chigasa	0.075
15	3/21 12:00 ~ 13:00	新潟県	Niigata (Niigata)	0.048
16	3/21 12:00 ~ 13:00	富山県	Toyama (Imizu)	0.052
17	3/21 12:00 ~ 13:00	石川県	Ishikawa (Kanazawa	0.05
18	3/21 12:00 ~ 13:00	福井県	Fukui (Fukui)	0.048
19	3/21 12:00 ~ 13:00	山梨県	Yamanashi (Kofu)	0.045
20	3/21 12:00 ~ 13:00	長野県	Nagano (Nagano)	0.057
21	3/21 12:00 ~ 13:00	岐阜県	Gifu (Kakamigahara	0.06
22	3/21 12:00 ~ 13:00	静岡県	Shizuoka (Shizuoka	0.034
23	3/21 12:00 ~ 13:00	愛知県	Aichi (Nagoya)	0.04
24	3/21 12:00 ~ 13:00	三重県	Mie (Yokkaichi)	0.046
25	3/21 12:00 ~ 13:00	滋賀県	Shiga (Ohtsu)	0.036
26	3/21 12:00 ~ 13:00	京都府	Kyoto (Kyoto)	0.045
27	3/21 12:00 ~ 13:00	大阪府	Osaka (Osaka)	0.047
28	3/21 12:00 ~ 13:00	兵庫県	Hyogo (Kobe)	0.042
29	3/21 12:00 ~ 13:00	奈良県	Nara (Nara)	0.049
30	3/21 12:00 ~ 13:00	和歌山県	Wakayama (Wakaya	0.034
31	3/21 12:00 ~ 13:00	鳥取県	Tottori (Touhaku-g	0.071
32	3/21 12:00 ~ 13:00	島根県	Shimane (Matsue)	0.037
33	3/21 12:00 ~ 13:00	岡山県	Okayama (Okayama	0.055
34	3/21 12:00 ~ 13:00	広島県	Hiroshima (Hiroshin	0.051
35	3/21 12:00 ~ 13:00	山口県	Yamaguchi (Yamagu	0.092
36	3/21 12:00 ~ 13:00	徳島県	Tokushima (Tokush	0.04
37	3/21 12:00 ~ 13:00	香川県	Kagawa (Takamatsu	0.056
38	3/21 12:00 ~ 13:00	愛媛県	Ehime (Matsuyama)	0.054
39	3/21 12:00 ~ 13:00	高知県	Kochi (Kochi)	0.026
40	3/21 12:00 ~ 13:00	福岡県	Fukuoka (Dazaifu)	0.04
41	3/21 12:00 ~ 13:00	佐賀県	Saga (Saga)	0.041
42	3/21 12:00 ~ 13:00	長崎県	Nagasaki (Ohmura)	0.029
43	3/21 12:00 ~ 13:00	熊本県	Kumamoto (Uto)	0.028
44	3/21 12:00 ~ 13:00	大分県	Oita (Oita)	0.052
45	3/21 12:00 ~ 13:00	宮崎県	Miyazaki (Miyazaki)	0.027
46	3/21 12:00 ~ 13:00	鹿児島県	Kagoshima (Kagosh	0.034
47	3/21 12:00 ~ 13:00	沖縄県	Okinawa (Uruma)	0.02
1	3/21 13:00 ~ 14:00	北海道	Hokkaido (Sapporo)	0.028
2	3/21 13:00 ~ 14:00	青森県	Aomori (Aomori)	0.022
3	3/21 13:00 ~ 14:00	岩手県	Iwate (Morioka)	0.035
4	3/21 13:00 ~ 14:00	宮城県	Miyagi (Sendai)	
5	3/21 13:00 ~ 14:00	秋田県	Akita (Akita)	0.035
6	3/21 13:00 ~ 14:00	山形県	Yamagata (Yamaga	0.101
7	3/21 13:00 ~ 14:00	福島県	Fukushima (Futaba-gun)	
8	3/21 13:00 ~ 14:00	茨城県	Ibaraki (Mito)	0.317
9	3/21 13:00 ~ 14:00	栃木県	Tochigi (Utsunomiya	0.14
10	3/21 13:00 ~ 14:00	群馬県	Gunma (Maebashi)	0.068
11	3/21 13:00 ~ 14:00	埼玉県	Saitama (Saitama)	0.098
12	3/21 13:00 ~ 14:00	千葉県	Chiba (Ichihara)	0.081
13	3/21 13:00 ~ 14:00	東京都	Tokyo (Shinjuku-ku	0.108
14	3/21 13:00 ~ 14:00	神奈川県	Kanagawa (Chigasa	0.081
15	3/21 13:00 ~ 14:00	新潟県	Niigata (Niigata)	0.049
16	3/21 13:00 ~ 14:00	富山県	Toyama (Imizu)	0.052
17	3/21 13:00 ~ 14:00	石川県	Ishikawa (Kanazawa	0.048
18	3/21 13:00 ~ 14:00	福井県	Fukui (Fukui)	0.046
19	3/21 13:00 ~ 14:00	山梨県	Yamanashi (Kofu)	0.053
20	3/21 13:00 ~ 14:00	長野県	Nagano (Nagano)	0.057
21	3/21 13:00 ~ 14:00	岐阜県	Gifu (Kakamigahara	0.061
22	3/21 13:00 ~ 14:00	静岡県	Shizuoka (Shizuoka	0.034

23	3/21 13:00 ~ 14:00	愛知県	Aichi (Nagoya)	0.039
24	3/21 13:00 ~ 14:00	三重県	Mie (Yokkaichi)	0.046
25	3/21 13:00 ~ 14:00	滋賀県	Shiga (Ohtsu)	0.035
26	3/21 13:00 ~ 14:00	京都府	Kyoto (Kyoto)	0.044
27	3/21 13:00 ~ 14:00	大阪府	Osaka (Osaka)	0.049
28	3/21 13:00 ~ 14:00	兵庫県	Hyogo (Kobe)	0.04
29	3/21 13:00 ~ 14:00	奈良県	Nara (Nara)	0.052
30	3/21 13:00 ~ 14:00	和歌山県	Wakayama (Wakaya	0.039
31	3/21 13:00 ~ 14:00	鳥取県	Tottori (Touhaku-g	0.066
32	3/21 13:00 ~ 14:00	島根県	Shimane (Matsue)	0.036
33	3/21 13:00 ~ 14:00	岡山県	Okayama (Okayama	0.05
34	3/21 13:00 ~ 14:00	広島県	Hiroshima (Hiroshin	0.048
35	3/21 13:00 ~ 14:00	山口県	Yamaguchi (Yamagı	0.09
36	3/21 13:00 ~ 14:00	徳島県	Tokushima (Tokush	0.042
37	3/21 13:00 ~ 14:00	香川県	Kagawa (Takamatsı	0.054
38	3/21 13:00 ~ 14:00	愛媛県	Ehime (Matsuyama	0.05
39	3/21 13:00 ~ 14:00	高知県	Kochi (Kochi)	0.026
40	3/21 13:00 ~ 14:00	福岡県	Fukuoka (Dazaifu)	0.041
41	3/21 13:00 ~ 14:00	佐賀県	Saga (Saga)	0.043
42	3/21 13:00 ~ 14:00	長崎県	Nagasaki (Ohmura)	0.029
43	3/21 13:00 ~ 14:00	熊本県	Kumamoto (Uto)	0.027
44	3/21 13:00 ~ 14:00	大分県	Oita (Oita)	0.051
45	3/21 13:00 ~ 14:00	宮崎県	Miyazaki (Miyazaki)	0.027
46	3/21 13:00 ~ 14:00	鹿児島県	Kagoshima (Kagosh	0.035
47	3/21 13:00 ~ 14:00	沖縄県	Okinawa (Uruma)	0.02
1	3/21 14:00 ~ 15:00	北海道	Hokkaido (Sapporo	0.028
2	3/21 14:00 ~ 15:00	青森県	Aomori (Aomori)	0.022
3	3/21 14:00 ~ 15:00	岩手県	Iwate (Morioka)	0.034
4	3/21 14:00 ~ 15:00	宮城県	Miyagi (Sendai)	
5	3/21 14:00 ~ 15:00	秋田県	Akita (Akita)	0.035
6	3/21 14:00 ~ 15:00	山形県	Yamagata (Yamaga	0.1
7	3/21 14:00 ~ 15:00	福島県	Fukushima (Futaba-gun)	
8	3/21 14:00 ~ 15:00	茨城県	Ibaraki (Mito)	0.327
9	3/21 14:00 ~ 15:00	栃木県	Tochigi (Itsunomiya	0.137
10	3/21 14:00 ~ 15:00	群馬県	Gunma (Maebashi)	0.07
11	3/21 14:00 ~ 15:00	埼玉県	Saitama (Saitama)	0.1
12	3/21 14:00 ~ 15:00	千葉県	Chiba (Ichihara)	0.081
13	3/21 14:00 ~ 15:00	東京都	Tokyo (Shinjuku-kı	0.112
14	3/21 14:00 ~ 15:00	神奈川県	Kanagawa (Chigasa	0.078
15	3/21 14:00 ~ 15:00	新潟県	Niigata (Niigata)	0.047
16	3/21 14:00 ~ 15:00	富山県	Toyama (Imizu)	0.049
17	3/21 14:00 ~ 15:00	石川県	Ishikawa (Kanazawa	0.047
18	3/21 14:00 ~ 15:00	福井県	Fukui (Fukui)	0.045
19	3/21 14:00 ~ 15:00	山梨県	Yamanashi (Kofu)	0.054
20	3/21 14:00 ~ 15:00	長野県	Nagano (Nagano)	0.057
21	3/21 14:00 ~ 15:00	岐阜県	Gifu (Kakamigahara	0.06
22	3/21 14:00 ~ 15:00	静岡県	Shizuoka (Shizuoka	0.041
23	3/21 14:00 ~ 15:00	愛知県	Aichi (Nagoya)	0.039
24	3/21 14:00 ~ 15:00	三重県	Mie (Yokkaichi)	0.046
25	3/21 14:00 ~ 15:00	滋賀県	Shiga (Ohtsu)	0.033
26	3/21 14:00 ~ 15:00	京都府	Kyoto (Kyoto)	0.039
27	3/21 14:00 ~ 15:00	大阪府	Osaka (Osaka)	0.045
28	3/21 14:00 ~ 15:00	兵庫県	Hyogo (Kobe)	0.037
29	3/21 14:00 ~ 15:00	奈良県	Nara (Nara)	0.05
30	3/21 14:00 ~ 15:00	和歌山県	Wakayama (Wakaya	0.035
31	3/21 14:00 ~ 15:00	鳥取県	Tottori (Touhaku-g	0.065
32	3/21 14:00 ~ 15:00	島根県	Shimane (Matsue)	0.036

33	3/21 14:00 ~ 15:00	岡山県	Okayama (Okayama	0.048
34	3/21 14:00 ~ 15:00	広島県	Hiroshima (Hiroshin	0.047
35	3/21 14:00 ~ 15:00	山口県	Yamaguchi (Yamagı	0.089
36	3/21 14:00 ~ 15:00	徳島県	Tokushima (Tokush	0.039
37	3/21 14:00 ~ 15:00	香川県	Kagawa (Takamatsı	0.052
38	3/21 14:00 ~ 15:00	愛媛県	Ehime (Matsuyama)	0.048
39	3/21 14:00 ~ 15:00	高知県	Kochi (Kochi)	0.025
40	3/21 14:00 ~ 15:00	福岡県	Fukuoka (Dazaifu)	0.041
41	3/21 14:00 ~ 15:00	佐賀県	Saga (Saga)	0.045
42	3/21 14:00 ~ 15:00	長崎県	Nagasaki (Ohmura)	0.029
43	3/21 14:00 ~ 15:00	熊本県	Kumamoto (Uto)	0.027
44	3/21 14:00 ~ 15:00	大分県	Oita (Oita)	0.052
45	3/21 14:00 ~ 15:00	宮崎県	Miyazaki (Miyazaki)	0.03
46	3/21 14:00 ~ 15:00	鹿児島県	Kagoshima (Kagosh	0.035
47	3/21 14:00 ~ 15:00	沖縄県	Okinawa (Uruma)	0.02
1	3/21 15:00 ~ 16:00	北海道	Hokkaido (Sapporo)	0.028
2	3/21 15:00 ~ 16:00	青森県	Aomori (Aomori)	0.022
3	3/21 15:00 ~ 16:00	岩手県	Iwate (Morioka)	0.034
4	3/21 15:00 ~ 16:00	宮城県	Miyagi (Sendai)	
5	3/21 15:00 ~ 16:00	秋田県	Akita (Akita)	0.035
6	3/21 15:00 ~ 16:00	山形県	Yamagata (Yamaga	0.1
7	3/21 15:00 ~ 16:00	福島県	Fukushima (Futaba-gun)	
8	3/21 15:00 ~ 16:00	茨城県	Ibaraki (Mito)	0.347
9	3/21 15:00 ~ 16:00	栃木県	Tochigi (Itsunomiya	0.135
10	3/21 15:00 ~ 16:00	群馬県	Gunma (Maebashi)	0.075
11	3/21 15:00 ~ 16:00	埼玉県	Saitama (Saitama)	0.106
12	3/21 15:00 ~ 16:00	千葉県	Chiba (Ichihara)	0.083
13	3/21 15:00 ~ 16:00	東京都	Tokyo (Shinjuku-ku	0.118
14	3/21 15:00 ~ 16:00	神奈川県	Kanagawa (Chigasa	0.079
15	3/21 15:00 ~ 16:00	新潟県	Niigata (Niigata)	0.047
16	3/21 15:00 ~ 16:00	富山県	Toyama (Imizu)	0.047
17	3/21 15:00 ~ 16:00	石川県	Ishikawa (Kanazawa	0.047
18	3/21 15:00 ~ 16:00	福井県	Fukui (Fukui)	0.045
19	3/21 15:00 ~ 16:00	山梨県	Yamanashi (Kofu)	0.055
20	3/21 15:00 ~ 16:00	長野県	Nagano (Nagano)	0.057
21	3/21 15:00 ~ 16:00	岐阜県	Gifu (Kakamigahara	0.06
22	3/21 15:00 ~ 16:00	静岡県	Shizuoka (Shizuoka	0.046
23	3/21 15:00 ~ 16:00	愛知県	Aichi (Nagoya)	0.039
24	3/21 15:00 ~ 16:00	三重県	Mie (Yokkaichi)	0.046
25	3/21 15:00 ~ 16:00	滋賀県	Shiga (Ohtsu)	0.032
26	3/21 15:00 ~ 16:00	京都府	Kyoto (Kyoto)	0.038
27	3/21 15:00 ~ 16:00	大阪府	Osaka (Osaka)	0.043
28	3/21 15:00 ~ 16:00	兵庫県	Hyogo (Kobe)	0.036
29	3/21 15:00 ~ 16:00	奈良県	Nara (Nara)	0.047
30	3/21 15:00 ~ 16:00	和歌山県	Wakayama (Wakaya	0.032
31	3/21 15:00 ~ 16:00	鳥取県	Tottori (Touhaku-g	0.064
32	3/21 15:00 ~ 16:00	島根県	Shimane (Matsue)	0.036
33	3/21 15:00 ~ 16:00	岡山県	Okayama (Okayama	0.048
34	3/21 15:00 ~ 16:00	広島県	Hiroshima (Hiroshin	0.047
35	3/21 15:00 ~ 16:00	山口県	Yamaguchi (Yamagı	0.089
36	3/21 15:00 ~ 16:00	徳島県	Tokushima (Tokush	0.038
37	3/21 15:00 ~ 16:00	香川県	Kagawa (Takamatsı	0.052
38	3/21 15:00 ~ 16:00	愛媛県	Ehime (Matsuyama)	0.049
39	3/21 15:00 ~ 16:00	高知県	Kochi (Kochi)	0.025
40	3/21 15:00 ~ 16:00	福岡県	Fukuoka (Dazaifu)	0.044
41	3/21 15:00 ~ 16:00	佐賀県	Saga (Saga)	0.043
42	3/21 15:00 ~ 16:00	長崎県	Nagasaki (Ohmura)	0.029

43	3/21 15:00 ~ 16:00	熊本県	Kumamoto (Uto)	0.027
44	3/21 15:00 ~ 16:00	大分県	Oita (Oita)	0.052
45	3/21 15:00 ~ 16:00	宮崎県	Miyazaki (Miyazaki)	0.047
46	3/21 15:00 ~ 16:00	鹿児島県	Kagoshima (Kagosh	0.034
47	3/21 15:00 ~ 16:00	沖縄県	Okinawa (Uruma)	0.02
1	3/21 16:00 ~ 17:00	北海道	Hokkaido (Sapporo)	0.028
2	3/21 16:00 ~ 17:00	青森県	Aomori (Aomori)	0.022
3	3/21 16:00 ~ 17:00	岩手県	Iwate (Morioka)	0.034
4	3/21 16:00 ~ 17:00	宮城県	Miyagi (Sendai)	
5	3/21 16:00 ~ 17:00	秋田県	Akita (Akita)	0.035
6	3/21 16:00 ~ 17:00	山形県	Yamagata (Yamaga	0.1
7	3/21 16:00 ~ 17:00	福島県	Fukushima (Futaba-gun)	
8	3/21 16:00 ~ 17:00	茨城県	Ibaraki (Mito)	0.34
9	3/21 16:00 ~ 17:00	栃木県	Tochigi (Itsunomiya	0.133
10	3/21 16:00 ~ 17:00	群馬県	Gunma (Maebashi)	0.085
11	3/21 16:00 ~ 17:00	埼玉県	Saitama (Saitama)	0.106
12	3/21 16:00 ~ 17:00	千葉県	Chiba (Ichihara)	0.082
13	3/21 16:00 ~ 17:00	東京都	Tokyo (Shinjuku-ku	0.125
14	3/21 16:00 ~ 17:00	神奈川県	Kanagawa (Chigasa	0.083
15	3/21 16:00 ~ 17:00	新潟県	Niigata (Niigata)	0.046
16	3/21 16:00 ~ 17:00	富山県	Toyama (Imizu)	0.047
17	3/21 16:00 ~ 17:00	石川県	Ishikawa (Kanazawa	0.047
18	3/21 16:00 ~ 17:00	福井県	Fukui (Fukui)	0.045
19	3/21 16:00 ~ 17:00	山梨県	Yamanashi (Kofu)	0.058
20	3/21 16:00 ~ 17:00	長野県	Nagano (Nagano)	0.057
21	3/21 16:00 ~ 17:00	岐阜県	Gifu (Kakamigahara	0.06
22	3/21 16:00 ~ 17:00	静岡県	Shizuoka (Shizuoka	0.046
23	3/21 16:00 ~ 17:00	愛知県	Aichi (Nagoya)	0.039
24	3/21 16:00 ~ 17:00	三重県	Mie (Yokkaichi)	0.045
25	3/21 16:00 ~ 17:00	滋賀県	Shiga (Ohtsu)	0.032
26	3/21 16:00 ~ 17:00	京都府	Kyoto (Kyoto)	0.037
27	3/21 16:00 ~ 17:00	大阪府	Osaka (Osaka)	0.042
28	3/21 16:00 ~ 17:00	兵庫県	Hyogo (Kobe)	0.036
29	3/21 16:00 ~ 17:00	奈良県	Nara (Nara)	0.047
30	3/21 16:00 ~ 17:00	和歌山県	Wakayama (Wakaya	0.032
31	3/21 16:00 ~ 17:00	鳥取県	Tottori (Touhaku-g	0.063
32	3/21 16:00 ~ 17:00	島根県	Shimane (Matsue)	0.036
33	3/21 16:00 ~ 17:00	岡山県	Okayama (Okayama	0.048
34	3/21 16:00 ~ 17:00	広島県	Hiroshima (Hiroshin	0.047
35	3/21 16:00 ~ 17:00	山口県	Yamaguchi (Yamagu	0.09
36	3/21 16:00 ~ 17:00	徳島県	Tokushima (Tokush	0.038
37	3/21 16:00 ~ 17:00	香川県	Kagawa (Takamatsu	0.053
38	3/21 16:00 ~ 17:00	愛媛県	Ehime (Matsuyama)	0.049
39	3/21 16:00 ~ 17:00	高知県	Kochi (Kochi)	0.027
40	3/21 16:00 ~ 17:00	福岡県	Fukuoka (Dazaifu)	0.043
41	3/21 16:00 ~ 17:00	佐賀県	Saga (Saga)	0.041
42	3/21 16:00 ~ 17:00	長崎県	Nagasaki (Ohmura)	0.029
43	3/21 16:00 ~ 17:00	熊本県	Kumamoto (Uto)	0.027
44	3/21 16:00 ~ 17:00	大分県	Oita (Oita)	0.051
45	3/21 16:00 ~ 17:00	宮崎県	Miyazaki (Miyazaki)	0.039
46	3/21 16:00 ~ 17:00	鹿児島県	Kagoshima (Kagosh	0.034
47	3/21 16:00 ~ 17:00	沖縄県	Okinawa (Uruma)	0.021
1	3/21 17:00 ~ 18:00	北海道	Hokkaido (Sapporo)	0.028
2	3/21 17:00 ~ 18:00	青森県	Aomori (Aomori)	0.022
3	3/21 17:00 ~ 18:00	岩手県	Iwate (Morioka)	0.034
4	3/21 17:00 ~ 18:00	宮城県	Miyagi (Sendai)	
5	3/21 17:00 ~ 18:00	秋田県	Akita (Akita)	0.035

http://www.mext.go.jp/component/a_menu/other/detail/_icsFiles/afieldfile/2011/03/15/1303577_05_1.pdf

6	3/21 17:00 ~ 18:00	山形県	Yamagata (Yamaga	0.1
7	3/21 17:00 ~ 18:00	福島県	Fukushima (Futaba-gun)	
8	3/21 17:00 ~ 18:00	茨城県	Ibaraki (Mito)	0.336
9	3/21 17:00 ~ 18:00	栃木県	Tochigi (Itsunomiya	0.154
10	3/21 17:00 ~ 18:00	群馬県	Gunma (Maebashi)	0.082
11	3/21 17:00 ~ 18:00	埼玉県	Saitama (Saitama)	0.109
12	3/21 17:00 ~ 18:00	千葉県	Chiba (Ichihara)	0.084
13	3/21 17:00 ~ 18:00	東京都	Tokyo (Shinjuku-ku	0.134
14	3/21 17:00 ~ 18:00	神奈川県	Kanagawa (Chigasa	0.089
15	3/21 17:00 ~ 18:00	新潟県	Niigata (Niigata)	0.046
16	3/21 17:00 ~ 18:00	富山県	Toyama (Imizu)	0.047
17	3/21 17:00 ~ 18:00	石川県	Ishikawa (Kanazawa	0.047
18	3/21 17:00 ~ 18:00	福井県	Fukui (Fukui)	0.045
19	3/21 17:00 ~ 18:00	山梨県	Yamanashi (Kofu)	0.051
20	3/21 17:00 ~ 18:00	長野県	Nagano (Nagano)	0.057
21	3/21 17:00 ~ 18:00	岐阜県	Gifu (Kakamigahara	0.06
22	3/21 17:00 ~ 18:00	静岡県	Shizuoka (Shizuoka	0.042
23	3/21 17:00 ~ 18:00	愛知県	Aichi (Nagoya)	0.039
24	3/21 17:00 ~ 18:00	三重県	Mie (Yokkaichi)	0.046
25	3/21 17:00 ~ 18:00	滋賀県	Shiga (Ohtsu)	0.032
26	3/21 17:00 ~ 18:00	京都府	Kyoto (Kyoto)	0.038
27	3/21 17:00 ~ 18:00	大阪府	Osaka (Osaka)	0.042
28	3/21 17:00 ~ 18:00	兵庫県	Hyogo (Kobe)	0.036
29	3/21 17:00 ~ 18:00	奈良県	Nara (Nara)	0.047
30	3/21 17:00 ~ 18:00	和歌山県	Wakayama (Wakaya	0.031
31	3/21 17:00 ~ 18:00	鳥取県	Tottori (Touhaku-g	0.063
32	3/21 17:00 ~ 18:00	島根県	Shimane (Matsue)	0.036
33	3/21 17:00 ~ 18:00	岡山県	Okayama (Okayama	0.048
34	3/21 17:00 ~ 18:00	広島県	Hiroshima (Hiroshin	0.047
35	3/21 17:00 ~ 18:00	山口県	Yamaguchi (Yamagu	0.1
36	3/21 17:00 ~ 18:00	徳島県	Tokushima (Tokush	0.038
37	3/21 17:00 ~ 18:00	香川県	Kagawa (Takamatsu	0.052
38	3/21 17:00 ~ 18:00	愛媛県	Ehime (Matsuyama	0.05
39	3/21 17:00 ~ 18:00	高知県	Kochi (Kochi)	0.028
40	3/21 17:00 ~ 18:00	福岡県	Fukuoka (Dazaifu)	0.039
41	3/21 17:00 ~ 18:00	佐賀県	Saga (Saga)	0.04
42	3/21 17:00 ~ 18:00	長崎県	Nagasaki (Ohmura)	0.029
43	3/21 17:00 ~ 18:00	熊本県	Kumamoto (Uto)	0.029
44	3/21 17:00 ~ 18:00	大分県	Oita (Oita)	0.051
45	3/21 17:00 ~ 18:00	宮崎県	Miyazaki (Miyazaki)	0.032
46	3/21 17:00 ~ 18:00	鹿児島県	Kagoshima (Kagosh	0.034
47	3/21 17:00 ~ 18:00	沖縄県	Okinawa (Uruma)	0.02
1	3/21 18:00 ~ 19:00	北海道	Hokkaido (Sapporo	0.028
2	3/21 18:00 ~ 19:00	青森県	Aomori (Aomori)	0.022
3	3/21 18:00 ~ 19:00	岩手県	Iwate (Morioka)	0.034
4	3/21 18:00 ~ 19:00	宮城県	Miyagi (Sendai)	
5	3/21 18:00 ~ 19:00	秋田県	Akita (Akita)	0.035
6	3/21 18:00 ~ 19:00	山形県	Yamagata (Yamaga	0.1
7	3/21 18:00 ~ 19:00	福島県	Fukushima (Futaba-gun)	
8	3/21 18:00 ~ 19:00	茨城県	Ibaraki (Mito)	0.332
9	3/21 18:00 ~ 19:00	栃木県	Tochigi (Itsunomiya	0.156
10	3/21 18:00 ~ 19:00	群馬県	Gunma (Maebashi)	0.088
11	3/21 18:00 ~ 19:00	埼玉県	Saitama (Saitama)	0.106
12	3/21 18:00 ~ 19:00	千葉県	Chiba (Ichihara)	0.083
13	3/21 18:00 ~ 19:00	東京都	Tokyo (Shinjuku-ku	0.135
14	3/21 18:00 ~ 19:00	神奈川県	Kanagawa (Chigasa	0.094
15	3/21 18:00 ~ 19:00	新潟県	Niigata (Niigata)	0.047

16	3/21 18:00 ~ 19:00	富山県	Toyama (Imizu)	0.047
17	3/21 18:00 ~ 19:00	石川県	Ishikawa (Kanazawa	0.048
18	3/21 18:00 ~ 19:00	福井県	Fukui (Fukui)	0.046
19	3/21 18:00 ~ 19:00	山梨県	Yamanashi (Kofu)	0.048
20	3/21 18:00 ~ 19:00	長野県	Nagano (Nagano)	0.056
21	3/21 18:00 ~ 19:00	岐阜県	Gifu (Kakamigahara	0.06
22	3/21 18:00 ~ 19:00	静岡県	Shizuoka (Shizuoka	0.047
23	3/21 18:00 ~ 19:00	愛知県	Aichi (Nagoya)	0.039
24	3/21 18:00 ~ 19:00	三重県	Mie (Yokkaichi)	0.046
25	3/21 18:00 ~ 19:00	滋賀県	Shiga (Ohtsu)	0.032
26	3/21 18:00 ~ 19:00	京都府	Kyoto (Kyoto)	0.037
27	3/21 18:00 ~ 19:00	大阪府	Osaka (Osaka)	0.042
28	3/21 18:00 ~ 19:00	兵庫県	Hyogo (Kobe)	0.036
29	3/21 18:00 ~ 19:00	奈良県	Nara (Nara)	0.047
30	3/21 18:00 ~ 19:00	和歌山県	Wakayama (Wakaya	0.032
31	3/21 18:00 ~ 19:00	鳥取県	Tottori (Touhaku-g	0.063
32	3/21 18:00 ~ 19:00	島根県	Shimane (Matsue)	0.036
33	3/21 18:00 ~ 19:00	岡山県	Okayama (Okayama	0.048
34	3/21 18:00 ~ 19:00	広島県	Hiroshima (Hiroshin	0.052
35	3/21 18:00 ~ 19:00	山口県	Yamaguchi (Yamagu	0.106
36	3/21 18:00 ~ 19:00	徳島県	Tokushima (Tokush	0.04
37	3/21 18:00 ~ 19:00	香川県	Kagawa (Takamatsu	0.056
38	3/21 18:00 ~ 19:00	愛媛県	Ehime (Matsuyama)	0.049
39	3/21 18:00 ~ 19:00	高知県	Kochi (Kochi)	0.027
40	3/21 18:00 ~ 19:00	福岡県	Fukuoka (Dazaifu)	0.045
41	3/21 18:00 ~ 19:00	佐賀県	Saga (Saga)	0.043
42	3/21 18:00 ~ 19:00	長崎県	Nagasaki (Ohmura)	0.029
43	3/21 18:00 ~ 19:00	熊本県	Kumamoto (Uto)	0.031
44	3/21 18:00 ~ 19:00	大分県	Oita (Oita)	0.051
45	3/21 18:00 ~ 19:00	宮崎県	Miyazaki (Miyazaki)	0.034
46	3/21 18:00 ~ 19:00	鹿児島県	Kagoshima (Kagosh	0.035
47	3/21 18:00 ~ 19:00	沖縄県	Okinawa (Uruma)	0.02
1	3/21 19:00 ~ 20:00	北海道	Hokkaido (Sapporo)	0.028
2	3/21 19:00 ~ 20:00	青森県	Aomori (Aomori)	0.022
3	3/21 19:00 ~ 20:00	岩手県	Iwate (Morioka)	0.034
4	3/21 19:00 ~ 20:00	宮城県	Miyagi (Sendai)	
5	3/21 19:00 ~ 20:00	秋田県	Akita (Akita)	0.035
6	3/21 19:00 ~ 20:00	山形県	Yamagata (Yamaga	0.099
7	3/21 19:00 ~ 20:00	福島県	Fukushima (Futaba-gun)	
8	3/21 19:00 ~ 20:00	茨城県	Ibaraki (Mito)	0.331
9	3/21 19:00 ~ 20:00	栃木県	Tochigi (Utsunomiya	0.137
10	3/21 19:00 ~ 20:00	群馬県	Gunma (Maebashi)	0.095
11	3/21 19:00 ~ 20:00	埼玉県	Saitama (Saitama)	0.11
12	3/21 19:00 ~ 20:00	千葉県	Chiba (Ichihara)	0.081
13	3/21 19:00 ~ 20:00	東京都	Tokyo (Shinjuku-ku	0.134
14	3/21 19:00 ~ 20:00	神奈川県	Kanagawa (Chigasa	0.101
15	3/21 19:00 ~ 20:00	新潟県	Niigata (Niigata)	0.046
16	3/21 19:00 ~ 20:00	富山県	Toyama (Imizu)	0.047
17	3/21 19:00 ~ 20:00	石川県	Ishikawa (Kanazawa	0.048
18	3/21 19:00 ~ 20:00	福井県	Fukui (Fukui)	0.045
19	3/21 19:00 ~ 20:00	山梨県	Yamanashi (Kofu)	0.047
20	3/21 19:00 ~ 20:00	長野県	Nagano (Nagano)	0.056
21	3/21 19:00 ~ 20:00	岐阜県	Gifu (Kakamigahara	0.06
22	3/21 19:00 ~ 20:00	静岡県	Shizuoka (Shizuoka	0.052
23	3/21 19:00 ~ 20:00	愛知県	Aichi (Nagoya)	0.039
24	3/21 19:00 ~ 20:00	三重県	Mie (Yokkaichi)	0.046
25	3/21 19:00 ~ 20:00	滋賀県	Shiga (Ohtsu)	0.032

26	3/21 19:00 ~ 20:00	京都府	Kyoto (Kyoto)	0.037
27	3/21 19:00 ~ 20:00	大阪府	Osaka (Osaka)	0.043
28	3/21 19:00 ~ 20:00	兵庫県	Hyogo (Kobe)	0.036
29	3/21 19:00 ~ 20:00	奈良県	Nara (Nara)	0.047
30	3/21 19:00 ~ 20:00	和歌山県	Wakayama (Wakaya	0.035
31	3/21 19:00 ~ 20:00	鳥取県	Tottori (Touhaku-g	0.064
32	3/21 19:00 ~ 20:00	島根県	Shimane (Matsue)	0.036
33	3/21 19:00 ~ 20:00	岡山県	Okayama (Okayama	0.053
34	3/21 19:00 ~ 20:00	広島県	Hiroshima (Hiroshin	0.056
35	3/21 19:00 ~ 20:00	山口県	Yamaguchi (Yamagu	0.108
36	3/21 19:00 ~ 20:00	徳島県	Tokushima (Tokush	0.04
37	3/21 19:00 ~ 20:00	香川県	Kagawa (Takamatsu	0.062
38	3/21 19:00 ~ 20:00	愛媛県	Ehime (Matsuyama	0.049
39	3/21 19:00 ~ 20:00	高知県	Kochi (Kochi)	0.027
40	3/21 19:00 ~ 20:00	福岡県	Fukuoka (Dazaifu)	0.046
41	3/21 19:00 ~ 20:00	佐賀県	Saga (Saga)	0.044
42	3/21 19:00 ~ 20:00	長崎県	Nagasaki (Ohmura)	0.028
43	3/21 19:00 ~ 20:00	熊本県	Kumamoto (Uto)	0.03
44	3/21 19:00 ~ 20:00	大分県	Oita (Oita)	0.051
45	3/21 19:00 ~ 20:00	宮崎県	Miyazaki (Miyazaki)	0.032
46	3/21 19:00 ~ 20:00	鹿児島県	Kagoshima (Kagosh	0.035
47	3/21 19:00 ~ 20:00	沖縄県	Okinawa (Uruma)	0.02
1	3/21 20:00 ~ 21:00	北海道	Hokkaido (Sapporo	0.028
2	3/21 20:00 ~ 21:00	青森県	Aomori (Aomori)	0.022
3	3/21 20:00 ~ 21:00	岩手県	Iwate (Morioka)	0.034
4	3/21 20:00 ~ 21:00	宮城県	Miyagi (Sendai)	
5	3/21 20:00 ~ 21:00	秋田県	Akita (Akita)	0.035
6	3/21 20:00 ~ 21:00	山形県	Yamagata (Yamaga	0.1
7	3/21 20:00 ~ 21:00	福島県	Fukushima (Futaba-gun)	
8	3/21 20:00 ~ 21:00	茨城県	Ibaraki (Mito)	0.329
9	3/21 20:00 ~ 21:00	栃木県	Tochigi (Itsunomiya	0.133
10	3/21 20:00 ~ 21:00	群馬県	Gunma (Maebashi)	0.093
11	3/21 20:00 ~ 21:00	埼玉県	Saitama (Saitama)	0.117
12	3/21 20:00 ~ 21:00	千葉県	Chiba (Ichihara)	0.081
13	3/21 20:00 ~ 21:00	東京都	Tokyo (Shinjuku-ku	0.137
14	3/21 20:00 ~ 21:00	神奈川県	Kanagawa (Chigasa	0.103
15	3/21 20:00 ~ 21:00	新潟県	Niigata (Niigata)	0.046
16	3/21 20:00 ~ 21:00	富山県	Toyama (Imizu)	0.047
17	3/21 20:00 ~ 21:00	石川県	Ishikawa (Kanazawa	0.047
18	3/21 20:00 ~ 21:00	福井県	Fukui (Fukui)	0.047
19	3/21 20:00 ~ 21:00	山梨県	Yamanashi (Kofu)	0.047
20	3/21 20:00 ~ 21:00	長野県	Nagano (Nagano)	0.056
21	3/21 20:00 ~ 21:00	岐阜県	Gifu (Kakamigahara	0.06
22	3/21 20:00 ~ 21:00	静岡県	Shizuoka (Shizuoka	0.056
23	3/21 20:00 ~ 21:00	愛知県	Aichi (Nagoya)	0.039
24	3/21 20:00 ~ 21:00	三重県	Mie (Yokkaichi)	0.046
25	3/21 20:00 ~ 21:00	滋賀県	Shiga (Ohtsu)	0.034
26	3/21 20:00 ~ 21:00	京都府	Kyoto (Kyoto)	0.039
27	3/21 20:00 ~ 21:00	大阪府	Osaka (Osaka)	0.049
28	3/21 20:00 ~ 21:00	兵庫県	Hyogo (Kobe)	0.04
29	3/21 20:00 ~ 21:00	奈良県	Nara (Nara)	0.053
30	3/21 20:00 ~ 21:00	和歌山県	Wakayama (Wakaya	0.033
31	3/21 20:00 ~ 21:00	鳥取県	Tottori (Touhaku-g	0.063
32	3/21 20:00 ~ 21:00	島根県	Shimane (Matsue)	0.036
33	3/21 20:00 ~ 21:00	岡山県	Okayama (Okayama	0.06
34	3/21 20:00 ~ 21:00	広島県	Hiroshima (Hiroshin	0.055
35	3/21 20:00 ~ 21:00	山口県	Yamaguchi (Yamagu	0.101

36	3/21 20:00 ~ 21:00	徳島県	Tokushima (Tokush	0.039
37	3/21 20:00 ~ 21:00	香川県	Kagawa (Takamatsı	0.064
38	3/21 20:00 ~ 21:00	愛媛県	Ehime (Matsuyama.	0.054
39	3/21 20:00 ~ 21:00	高知県	Kochi (Kochi)	0.026
40	3/21 20:00 ~ 21:00	福岡県	Fukuoka (Dazaifu)	0.04
41	3/21 20:00 ~ 21:00	佐賀県	Saga (Saga)	0.041
42	3/21 20:00 ~ 21:00	長崎県	Nagasaki (Ohmura)	0.029
43	3/21 20:00 ~ 21:00	熊本県	Kumamoto (Uto)	0.027
44	3/21 20:00 ~ 21:00	大分県	Oita (Oita)	0.05
45	3/21 20:00 ~ 21:00	宮崎県	Miyazaki (Miyazaki)	0.03
46	3/21 20:00 ~ 21:00	鹿児島県	Kagoshima (Kagosh	0.035
47	3/21 20:00 ~ 21:00	沖縄県	Okinawa (Uruma)	0.02
1	3/21 21:00 ~ 22:00	北海道	Hokkaido (Sapporo.	0.029
2	3/21 21:00 ~ 22:00	青森県	Aomori (Aomori)	0.022
3	3/21 21:00 ~ 22:00	岩手県	Iwate (Morioka)	0.034
4	3/21 21:00 ~ 22:00	宮城県	Miyagi (Sendai)	
5	3/21 21:00 ~ 22:00	秋田県	Akita (Akita)	0.035
6	3/21 21:00 ~ 22:00	山形県	Yamagata (Yamaga	0.1
7	3/21 21:00 ~ 22:00	福島県	Fukushima (Futaba-gun)	
8	3/21 21:00 ~ 22:00	茨城県	Ibaraki (Mito)	0.333
9	3/21 21:00 ~ 22:00	栃木県	Tochigi (Itsunomiya	0.132
10	3/21 21:00 ~ 22:00	群馬県	Gunma (Maebashi)	0.101
11	3/21 21:00 ~ 22:00	埼玉県	Saitama (Saitama)	0.118
12	3/21 21:00 ~ 22:00	千葉県	Chiba (Ichihara)	0.08
13	3/21 21:00 ~ 22:00	東京都	Tokyo (Shinjuku-kı	0.137
14	3/21 21:00 ~ 22:00	神奈川県	Kanagawa (Chigasa	0.109
15	3/21 21:00 ~ 22:00	新潟県	Niigata (Niigata)	0.046
16	3/21 21:00 ~ 22:00	富山県	Toyama (Imizu)	0.047
17	3/21 21:00 ~ 22:00	石川県	Ishikawa (Kanazawa	0.047
18	3/21 21:00 ~ 22:00	福井県	Fukui (Fukui)	0.049
19	3/21 21:00 ~ 22:00	山梨県	Yamanashi (Kofu)	0.051
20	3/21 21:00 ~ 22:00	長野県	Nagano (Nagano)	0.057
21	3/21 21:00 ~ 22:00	岐阜県	Gifu (Kakamigahara	0.061
22	3/21 21:00 ~ 22:00	静岡県	Shizuoka (Shizuoka	0.062
23	3/21 21:00 ~ 22:00	愛知県	Aichi (Nagoya)	0.043
24	3/21 21:00 ~ 22:00	三重県	Mie (Yokkaichi)	0.049
25	3/21 21:00 ~ 22:00	滋賀県	Shiga (Ohtsu)	0.039
26	3/21 21:00 ~ 22:00	京都府	Kyoto (Kyoto)	0.046
27	3/21 21:00 ~ 22:00	大阪府	Osaka (Osaka)	0.053
28	3/21 21:00 ~ 22:00	兵庫県	Hyogo (Kobe)	0.042
29	3/21 21:00 ~ 22:00	奈良県	Nara (Nara)	0.056
30	3/21 21:00 ~ 22:00	和歌山県	Wakayama (Wakaya	0.034
31	3/21 21:00 ~ 22:00	鳥取県	Tottori (Touhaku-g	0.063
32	3/21 21:00 ~ 22:00	島根県	Shimane (Matsue)	0.036
33	3/21 21:00 ~ 22:00	岡山県	Okayama (Okayama	0.06
34	3/21 21:00 ~ 22:00	広島県	Hiroshima (Hiroshin	0.052
35	3/21 21:00 ~ 22:00	山口県	Yamaguchi (Yamagı	0.096
36	3/21 21:00 ~ 22:00	徳島県	Tokushima (Tokush	0.041
37	3/21 21:00 ~ 22:00	香川県	Kagawa (Takamatsı	0.065
38	3/21 21:00 ~ 22:00	愛媛県	Ehime (Matsuyama.	0.052
39	3/21 21:00 ~ 22:00	高知県	Kochi (Kochi)	0.025
40	3/21 21:00 ~ 22:00	福岡県	Fukuoka (Dazaifu)	0.038
41	3/21 21:00 ~ 22:00	佐賀県	Saga (Saga)	0.04
42	3/21 21:00 ~ 22:00	長崎県	Nagasaki (Ohmura)	0.028
43	3/21 21:00 ~ 22:00	熊本県	Kumamoto (Uto)	0.028
44	3/21 21:00 ~ 22:00	大分県	Oita (Oita)	0.05
45	3/21 21:00 ~ 22:00	宮崎県	Miyazaki (Miyazaki)	0.028

46	3/21 21:00 ~ 22:00	鹿児島県	Kagoshima (Kagosh	0.035
47	3/21 21:00 ~ 22:00	沖縄県	Okinawa (Uruma)	0.021
1	3/21 22:00 ~ 23:00	北海道	Hokkaido (Sapporo)	0.029
2	3/21 22:00 ~ 23:00	青森県	Aomori (Aomori)	0.022
3	3/21 22:00 ~ 23:00	岩手県	Iwate (Morioka)	0.034
4	3/21 22:00 ~ 23:00	宮城県	Miyagi (Sendai)	
5	3/21 22:00 ~ 23:00	秋田県	Akita (Akita)	0.035
6	3/21 22:00 ~ 23:00	山形県	Yamagata (Yamaga	0.1
7	3/21 22:00 ~ 23:00	福島県	Fukushima (Futaba-gun)	
8	3/21 22:00 ~ 23:00	茨城県	Ibaraki (Mito)	0.329
9	3/21 22:00 ~ 23:00	栃木県	Tochigi (Itsunomiya	0.133
10	3/21 22:00 ~ 23:00	群馬県	Gunma (Maebashi)	0.112
11	3/21 22:00 ~ 23:00	埼玉県	Saitama (Saitama)	0.123
12	3/21 22:00 ~ 23:00	千葉県	Chiba (Ichihara)	0.088
13	3/21 22:00 ~ 23:00	東京都	Tokyo (Shinjuku-ku	0.141
14	3/21 22:00 ~ 23:00	神奈川県	Kanagawa (Chigasa	0.111
15	3/21 22:00 ~ 23:00	新潟県	Niigata (Niigata)	0.047
16	3/21 22:00 ~ 23:00	富山県	Toyama (Imizu)	0.047
17	3/21 22:00 ~ 23:00	石川県	Ishikawa (Kanazawa	0.047
18	3/21 22:00 ~ 23:00	福井県	Fukui (Fukui)	0.053
19	3/21 22:00 ~ 23:00	山梨県	Yamanashi (Kofu)	0.058
20	3/21 22:00 ~ 23:00	長野県	Nagano (Nagano)	0.056
21	3/21 22:00 ~ 23:00	岐阜県	Gifu (Kakamigahara	0.067
22	3/21 22:00 ~ 23:00	静岡県	Shizuoka (Shizuoka	0.064
23	3/21 22:00 ~ 23:00	愛知県	Aichi (Nagoya)	0.046
24	3/21 22:00 ~ 23:00	三重県	Mie (Yokkaichi)	0.057
25	3/21 22:00 ~ 23:00	滋賀県	Shiga (Ohtsu)	0.043
26	3/21 22:00 ~ 23:00	京都府	Kyoto (Kyoto)	0.052
27	3/21 22:00 ~ 23:00	大阪府	Osaka (Osaka)	0.053
28	3/21 22:00 ~ 23:00	兵庫県	Hyogo (Kobe)	0.045
29	3/21 22:00 ~ 23:00	奈良県	Nara (Nara)	0.056
30	3/21 22:00 ~ 23:00	和歌山県	Wakayama (Wakaya	0.041
31	3/21 22:00 ~ 23:00	鳥取県	Tottori (Touhaku-g	0.063
32	3/21 22:00 ~ 23:00	島根県	Shimane (Matsue)	0.036
33	3/21 22:00 ~ 23:00	岡山県	Okayama (Okayama	0.059
34	3/21 22:00 ~ 23:00	広島県	Hiroshima (Hiroshin	0.052
35	3/21 22:00 ~ 23:00	山口県	Yamaguchi (Yamagu	0.099
36	3/21 22:00 ~ 23:00	徳島県	Tokushima (Tokush	0.042
37	3/21 22:00 ~ 23:00	香川県	Kagawa (Takamatsu	0.061
38	3/21 22:00 ~ 23:00	愛媛県	Ehime (Matsuyama)	0.049
39	3/21 22:00 ~ 23:00	高知県	Kochi (Kochi)	0.025
40	3/21 22:00 ~ 23:00	福岡県	Fukuoka (Dazaifu)	0.041
41	3/21 22:00 ~ 23:00	佐賀県	Saga (Saga)	0.041
42	3/21 22:00 ~ 23:00	長崎県	Nagasaki (Ohmura)	0.029
43	3/21 22:00 ~ 23:00	熊本県	Kumamoto (Uto)	0.027
44	3/21 22:00 ~ 23:00	大分県	Oita (Oita)	0.05
45	3/21 22:00 ~ 23:00	宮崎県	Miyazaki (Miyazaki)	0.027
46	3/21 22:00 ~ 23:00	鹿児島県	Kagoshima (Kagosh	0.035
47	3/21 22:00 ~ 23:00	沖縄県	Okinawa (Uruma)	0.02
1	3/21 23:00 ~ 24:00	北海道	Hokkaido (Sapporo)	0.032
2	3/21 23:00 ~ 24:00	青森県	Aomori (Aomori)	0.022
3	3/21 23:00 ~ 24:00	岩手県	Iwate (Morioka)	0.035
4	3/21 23:00 ~ 24:00	宮城県	Miyagi (Sendai)	
5	3/21 23:00 ~ 24:00	秋田県	Akita (Akita)	0.036
6	3/21 23:00 ~ 24:00	山形県	Yamagata (Yamaga	0.1
7	3/21 23:00 ~ 24:00	福島県	Fukushima (Futaba-gun)	
8	3/21 23:00 ~ 24:00	茨城県	Ibaraki (Mito)	0.327

9	3/21 23:00 ~ 24:00	栃木県	Tochigi (Itsunomiya	0.147
10	3/21 23:00 ~ 24:00	群馬県	Gunma (Maebashi)	0.115
11	3/21 23:00 ~ 24:00	埼玉県	Saitama (Saitama)	0.126
12	3/21 23:00 ~ 24:00	千葉県	Chiba (Ichihara)	0.098
13	3/21 23:00 ~ 24:00	東京都	Tokyo (Shinjuku-ku	0.141
14	3/21 23:00 ~ 24:00	神奈川県	Kanagawa (Chigasa	0.11
15	3/21 23:00 ~ 24:00	新潟県	Niigata (Niigata)	0.046
16	3/21 23:00 ~ 24:00	富山県	Toyama (Imizu)	0.047
17	3/21 23:00 ~ 24:00	石川県	Ishikawa (Kanazawa	0.047
18	3/21 23:00 ~ 24:00	福井県	Fukui (Fukui)	0.05
19	3/21 23:00 ~ 24:00	山梨県	Yamanashi (Kofu)	0.061
20	3/21 23:00 ~ 24:00	長野県	Nagano (Nagano)	0.057
21	3/21 23:00 ~ 24:00	岐阜県	Gifu (Kakamigahara	0.066
22	3/21 23:00 ~ 24:00	静岡県	Shizuoka (Shizuoka	0.066
23	3/21 23:00 ~ 24:00	愛知県	Aichi (Nagoya)	0.048
24	3/21 23:00 ~ 24:00	三重県	Mie (Yokkaichi)	0.061
25	3/21 23:00 ~ 24:00	滋賀県	Shiga (Ohtsu)	0.042
26	3/21 23:00 ~ 24:00	京都府	Kyoto (Kyoto)	0.052
27	3/21 23:00 ~ 24:00	大阪府	Osaka (Osaka)	0.053
28	3/21 23:00 ~ 24:00	兵庫県	Hyogo (Kobe)	0.044
29	3/21 23:00 ~ 24:00	奈良県	Nara (Nara)	0.056
30	3/21 23:00 ~ 24:00	和歌山県	Wakayama (Wakaya	0.04
31	3/21 23:00 ~ 24:00	鳥取県	Tottori (Touhaku-g	0.063
32	3/21 23:00 ~ 24:00	島根県	Shimane (Matsue)	0.036
33	3/21 23:00 ~ 24:00	岡山県	Okayama (Okayama	0.059
34	3/21 23:00 ~ 24:00	広島県	Hiroshima (Hiroshin	0.054
35	3/21 23:00 ~ 24:00	山口県	Yamaguchi (Yamagu	0.104
36	3/21 23:00 ~ 24:00	徳島県	Tokushima (Tokush	0.041
37	3/21 23:00 ~ 24:00	香川県	Kagawa (Takamatsu	0.061
38	3/21 23:00 ~ 24:00	愛媛県	Ehime (Matsuyama)	0.055
39	3/21 23:00 ~ 24:00	高知県	Kochi (Kochi)	0.025
40	3/21 23:00 ~ 24:00	福岡県	Fukuoka (Dazaifu)	0.048
41	3/21 23:00 ~ 24:00	佐賀県	Saga (Saga)	0.05
42	3/21 23:00 ~ 24:00	長崎県	Nagasaki (Ohmura)	0.033
43	3/21 23:00 ~ 24:00	熊本県	Kumamoto (Uto)	0.032
44	3/21 23:00 ~ 24:00	大分県	Oita (Oita)	0.05
45	3/21 23:00 ~ 24:00	宮崎県	Miyazaki (Miyazaki)	0.028
46	3/21 23:00 ~ 24:00	鹿児島県	Kagoshima (Kagosh	0.035
47	3/21 23:00 ~ 24:00	沖縄県	Okinawa (Uruma)	0.02
1	3/22 00:00 ~ 01:00	北海道	Hokkaido (Sapporo)	0.037
2	3/22 00:00 ~ 01:00	青森県	Aomori (Aomori)	0.022
3	3/22 00:00 ~ 01:00	岩手県	Iwate (Morioka)	0.035
4	3/22 00:00 ~ 01:00	宮城県	Miyagi (Sendai)	
5	3/22 00:00 ~ 01:00	秋田県	Akita (Akita)	0.036
6	3/22 00:00 ~ 01:00	山形県	Yamagata (Yamaga	0.099
7	3/22 00:00 ~ 01:00	福島県	Fukushima (Futaba-gun)	
8	3/22 00:00 ~ 01:00	茨城県	Ibaraki (Mito)	0.322
9	3/22 00:00 ~ 01:00	栃木県	Tochigi (Itsunomiya	0.152
10	3/22 00:00 ~ 01:00	群馬県	Gunma (Maebashi)	0.114
11	3/22 00:00 ~ 01:00	埼玉県	Saitama (Saitama)	0.129
12	3/22 00:00 ~ 01:00	千葉県	Chiba (Ichihara)	0.092
13	3/22 00:00 ~ 01:00	東京都	Tokyo (Shinjuku-ku	0.142
14	3/22 00:00 ~ 01:00	神奈川県	Kanagawa (Chigasa	0.113
15	3/22 00:00 ~ 01:00	新潟県	Niigata (Niigata)	0.046
16	3/22 00:00 ~ 01:00	富山県	Toyama (Imizu)	0.047
17	3/22 00:00 ~ 01:00	石川県	Ishikawa (Kanazawa	0.047
18	3/22 00:00 ~ 01:00	福井県	Fukui (Fukui)	0.048

19	3/22 00:00 ~ 01:00	山梨県	Yamanashi (Kofu)	0.062
20	3/22 00:00 ~ 01:00	長野県	Nagano (Nagano)	0.057
21	3/22 00:00 ~ 01:00	岐阜県	Gifu (Kakamigahara	0.063
22	3/22 00:00 ~ 01:00	静岡県	Shizuoka (Shizuoka	0.071
23	3/22 00:00 ~ 01:00	愛知県	Aichi (Nagoya)	0.048
24	3/22 00:00 ~ 01:00	三重県	Mie (Yokkaichi)	0.059
25	3/22 00:00 ~ 01:00	滋賀県	Shiga (Ohtsu)	0.043
26	3/22 00:00 ~ 01:00	京都府	Kyoto (Kyoto)	0.052
27	3/22 00:00 ~ 01:00	大阪府	Osaka (Osaka)	0.056
28	3/22 00:00 ~ 01:00	兵庫県	Hyogo (Kobe)	0.044
29	3/22 00:00 ~ 01:00	奈良県	Nara (Nara)	0.059
30	3/22 00:00 ~ 01:00	和歌山県	Wakayama (Wakaya	0.045
31	3/22 00:00 ~ 01:00	鳥取県	Tottori (Touhaku-g	0.063
32	3/22 00:00 ~ 01:00	島根県	Shimane (Matsue)	0.037
33	3/22 00:00 ~ 01:00	岡山県	Okayama (Okayama	0.063
34	3/22 00:00 ~ 01:00	広島県	Hiroshima (Hiroshin	0.054
35	3/22 00:00 ~ 01:00	山口県	Yamaguchi (Yamagi	0.105
36	3/22 00:00 ~ 01:00	徳島県	Tokushima (Tokush	0.044
37	3/22 00:00 ~ 01:00	香川県	Kagawa (Takamatsı	0.064
38	3/22 00:00 ~ 01:00	愛媛県	Ehime (Matsuyama)	0.061
39	3/22 00:00 ~ 01:00	高知県	Kochi (Kochi)	0.03
40	3/22 00:00 ~ 01:00	福岡県	Fukuoka (Dazaifu)	0.048
41	3/22 00:00 ~ 01:00	佐賀県	Saga (Saga)	0.049
42	3/22 00:00 ~ 01:00	長崎県	Nagasaki (Ohmura)	0.033
43	3/22 00:00 ~ 01:00	熊本県	Kumamoto (Uto)	0.032
44	3/22 00:00 ~ 01:00	大分県	Oita (Oita)	0.057
45	3/22 00:00 ~ 01:00	宮崎県	Miyazaki (Miyazaki)	0.03
46	3/22 00:00 ~ 01:00	鹿児島県	Kagoshima (Kagosh	0.035
47	3/22 00:00 ~ 01:00	沖縄県	Okinawa (Uruma)	0.021
1	3/22 01:00 ~ 02:00	北海道	Hokkaido (Sapporo)	0.041
2	3/22 01:00 ~ 02:00	青森県	Aomori (Aomori)	0.022
3	3/22 01:00 ~ 02:00	岩手県	Iwate (Morioka)	0.036
4	3/22 01:00 ~ 02:00	宮城県	Miyagi (Sendai)	
5	3/22 01:00 ~ 02:00	秋田県	Akita (Akita)	0.036
6	3/22 01:00 ~ 02:00	山形県	Yamagata (Yamaga	0.099
7	3/22 01:00 ~ 02:00	福島県	Fukushima (Futaba-gun)	
8	3/22 01:00 ~ 02:00	茨城県	Ibaraki (Mito)	0.317
9	3/22 01:00 ~ 02:00	栃木県	Tochigi (Itsunomiya	0.15
10	3/22 01:00 ~ 02:00	群馬県	Gunma (Maebashi)	0.114
11	3/22 01:00 ~ 02:00	埼玉県	Saitama (Saitama)	0.122
12	3/22 01:00 ~ 02:00	千葉県	Chiba (Ichihara)	0.09
13	3/22 01:00 ~ 02:00	東京都	Tokyo (Shinjuku-ku	0.137
14	3/22 01:00 ~ 02:00	神奈川県	Kanagawa (Chigasa	0.113
15	3/22 01:00 ~ 02:00	新潟県	Niigata (Niigata)	0.046
16	3/22 01:00 ~ 02:00	富山県	Toyama (Imizu)	0.047
17	3/22 01:00 ~ 02:00	石川県	Ishikawa (Kanazawa	0.047
18	3/22 01:00 ~ 02:00	福井県	Fukui (Fukui)	0.054
19	3/22 01:00 ~ 02:00	山梨県	Yamanashi (Kofu)	0.061
20	3/22 01:00 ~ 02:00	長野県	Nagano (Nagano)	0.057
21	3/22 01:00 ~ 02:00	岐阜県	Gifu (Kakamigahara	0.065
22	3/22 01:00 ~ 02:00	静岡県	Shizuoka (Shizuoka	0.069
23	3/22 01:00 ~ 02:00	愛知県	Aichi (Nagoya)	0.05
24	3/22 01:00 ~ 02:00	三重県	Mie (Yokkaichi)	0.057
25	3/22 01:00 ~ 02:00	滋賀県	Shiga (Ohtsu)	0.043
26	3/22 01:00 ~ 02:00	京都府	Kyoto (Kyoto)	0.055
27	3/22 01:00 ~ 02:00	大阪府	Osaka (Osaka)	0.056
28	3/22 01:00 ~ 02:00	兵庫県	Hyogo (Kobe)	0.045

29	3/22 01:00 ~ 02:00	奈良県	Nara (Nara)	0.061
30	3/22 01:00 ~ 02:00	和歌山県	Wakayama (Wakaya	0.049
31	3/22 01:00 ~ 02:00	鳥取県	Tottori (Touhaku-g	0.063
32	3/22 01:00 ~ 02:00	島根県	Shimane (Matsue)	0.036
33	3/22 01:00 ~ 02:00	岡山県	Okayama (Okayama	0.062
34	3/22 01:00 ~ 02:00	広島県	Hiroshima (Hiroshin	0.052
35	3/22 01:00 ~ 02:00	山口県	Yamaguchi (Yamagu	0.098
36	3/22 01:00 ~ 02:00	徳島県	Tokushima (Tokush	0.046
37	3/22 01:00 ~ 02:00	香川県	Kagawa (Takamatsu	0.064
38	3/22 01:00 ~ 02:00	愛媛県	Ehime (Matsuyama)	0.059
39	3/22 01:00 ~ 02:00	高知県	Kochi (Kochi)	0.042
40	3/22 01:00 ~ 02:00	福岡県	Fukuoka (Dazaifu)	0.049
41	3/22 01:00 ~ 02:00	佐賀県	Saga (Saga)	0.055
42	3/22 01:00 ~ 02:00	長崎県	Nagasaki (Ohmura)	0.032
43	3/22 01:00 ~ 02:00	熊本県	Kumamoto (Uto)	0.032
44	3/22 01:00 ~ 02:00	大分県	Oita (Oita)	0.063
45	3/22 01:00 ~ 02:00	宮崎県	Miyazaki (Miyazaki)	0.034
46	3/22 01:00 ~ 02:00	鹿児島県	Kagoshima (Kagosh	0.041
47	3/22 01:00 ~ 02:00	沖縄県	Okinawa (Uruma)	0.021
1	3/22 02:00 ~ 03:00	北海道	Hokkaido (Sapporo)	0.034
2	3/22 02:00 ~ 03:00	青森県	Aomori (Aomori)	0.022
3	3/22 02:00 ~ 03:00	岩手県	Iwate (Morioka)	0.036
4	3/22 02:00 ~ 03:00	宮城県	Miyagi (Sendai)	
5	3/22 02:00 ~ 03:00	秋田県	Akita (Akita)	0.037
6	3/22 02:00 ~ 03:00	山形県	Yamagata (Yamaga	0.099
7	3/22 02:00 ~ 03:00	福島県	Fukushima (Futaba-gun)	
8	3/22 02:00 ~ 03:00	茨城県	Ibaraki (Mito)	0.317
9	3/22 02:00 ~ 03:00	栃木県	Tochigi (Itsunomiya	0.148
10	3/22 02:00 ~ 03:00	群馬県	Gunma (Maebashi)	0.115
11	3/22 02:00 ~ 03:00	埼玉県	Saitama (Saitama)	0.119
12	3/22 02:00 ~ 03:00	千葉県	Chiba (Ichihara)	0.088
13	3/22 02:00 ~ 03:00	東京都	Tokyo (Shinjuku-ku	0.134
14	3/22 02:00 ~ 03:00	神奈川県	Kanagawa (Chigasa	0.108
15	3/22 02:00 ~ 03:00	新潟県	Niigata (Niigata)	0.046
16	3/22 02:00 ~ 03:00	富山県	Toyama (Imizu)	0.047
17	3/22 02:00 ~ 03:00	石川県	Ishikawa (Kanazawa	0.047
18	3/22 02:00 ~ 03:00	福井県	Fukui (Fukui)	0.059
19	3/22 02:00 ~ 03:00	山梨県	Yamanashi (Kofu)	0.061
20	3/22 02:00 ~ 03:00	長野県	Nagano (Nagano)	0.06
21	3/22 02:00 ~ 03:00	岐阜県	Gifu (Kakamigahara	0.067
22	3/22 02:00 ~ 03:00	静岡県	Shizuoka (Shizuoka	0.069
23	3/22 02:00 ~ 03:00	愛知県	Aichi (Nagoya)	0.049
24	3/22 02:00 ~ 03:00	三重県	Mie (Yokkaichi)	0.055
25	3/22 02:00 ~ 03:00	滋賀県	Shiga (Ohtsu)	0.04
26	3/22 02:00 ~ 03:00	京都府	Kyoto (Kyoto)	0.05
27	3/22 02:00 ~ 03:00	大阪府	Osaka (Osaka)	0.053
28	3/22 02:00 ~ 03:00	兵庫県	Hyogo (Kobe)	0.045
29	3/22 02:00 ~ 03:00	奈良県	Nara (Nara)	0.056
30	3/22 02:00 ~ 03:00	和歌山県	Wakayama (Wakaya	0.053
31	3/22 02:00 ~ 03:00	鳥取県	Tottori (Touhaku-g	0.064
32	3/22 02:00 ~ 03:00	島根県	Shimane (Matsue)	0.037
33	3/22 02:00 ~ 03:00	岡山県	Okayama (Okayama	0.056
34	3/22 02:00 ~ 03:00	広島県	Hiroshima (Hiroshin	0.049
35	3/22 02:00 ~ 03:00	山口県	Yamaguchi (Yamagu	0.092
36	3/22 02:00 ~ 03:00	徳島県	Tokushima (Tokush	0.046
37	3/22 02:00 ~ 03:00	香川県	Kagawa (Takamatsu	0.061
38	3/22 02:00 ~ 03:00	愛媛県	Ehime (Matsuyama)	0.055

39	3/22 02:00 ~ 03:00	高知県	Kochi (Kochi)	0.049
40	3/22 02:00 ~ 03:00	福岡県	Fukuoka (Dazaifu)	0.048
41	3/22 02:00 ~ 03:00	佐賀県	Saga (Saga)	0.056
42	3/22 02:00 ~ 03:00	長崎県	Nagasaki (Ohmura)	0.035
43	3/22 02:00 ~ 03:00	熊本県	Kumamoto (Uto)	0.031
44	3/22 02:00 ~ 03:00	大分県	Oita (Oita)	0.064
45	3/22 02:00 ~ 03:00	宮崎県	Miyazaki (Miyazaki)	0.039
46	3/22 02:00 ~ 03:00	鹿児島県	Kagoshima (Kagosh	0.04
47	3/22 02:00 ~ 03:00	沖縄県	Okinawa (Uruma)	0.02
1	3/22 03:00 ~ 04:00	北海道	Hokkaido (Sapporo)	0.03
2	3/22 03:00 ~ 04:00	青森県	Aomori (Aomori)	0.022
3	3/22 03:00 ~ 04:00	岩手県	Iwate (Morioka)	0.036
4	3/22 03:00 ~ 04:00	宮城県	Miyagi (Sendai)	
5	3/22 03:00 ~ 04:00	秋田県	Akita (Akita)	0.037
6	3/22 03:00 ~ 04:00	山形県	Yamagata (Yamaga	0.099
7	3/22 03:00 ~ 04:00	福島県	Fukushima (Futaba-gun)	
8	3/22 03:00 ~ 04:00	茨城県	Ibaraki (Mito)	0.315
9	3/22 03:00 ~ 04:00	栃木県	Tochigi (Itsunomiya	0.146
10	3/22 03:00 ~ 04:00	群馬県	Gunma (Maebashi)	0.117
11	3/22 03:00 ~ 04:00	埼玉県	Saitama (Saitama)	0.12
12	3/22 03:00 ~ 04:00	千葉県	Chiba (Ichihara)	0.087
13	3/22 03:00 ~ 04:00	東京都	Tokyo (Shinjuku-ku	0.134
14	3/22 03:00 ~ 04:00	神奈川県	Kanagawa (Chigasa	0.106
15	3/22 03:00 ~ 04:00	新潟県	Niigata (Niigata)	0.046
16	3/22 03:00 ~ 04:00	富山県	Toyama (Imizu)	0.047
17	3/22 03:00 ~ 04:00	石川県	Ishikawa (Kanazawa	0.047
18	3/22 03:00 ~ 04:00	福井県	Fukui (Fukui)	0.059
19	3/22 03:00 ~ 04:00	山梨県	Yamanashi (Kofu)	0.06
20	3/22 03:00 ~ 04:00	長野県	Nagano (Nagano)	0.059
21	3/22 03:00 ~ 04:00	岐阜県	Gifu (Kakamigahara	0.066
22	3/22 03:00 ~ 04:00	静岡県	Shizuoka (Shizuoka	0.065
23	3/22 03:00 ~ 04:00	愛知県	Aichi (Nagoya)	0.048
24	3/22 03:00 ~ 04:00	三重県	Mie (Yokkaichi)	0.054
25	3/22 03:00 ~ 04:00	滋賀県	Shiga (Ohtsu)	0.037
26	3/22 03:00 ~ 04:00	京都府	Kyoto (Kyoto)	0.044
27	3/22 03:00 ~ 04:00	大阪府	Osaka (Osaka)	0.051
28	3/22 03:00 ~ 04:00	兵庫県	Hyogo (Kobe)	0.043
29	3/22 03:00 ~ 04:00	奈良県	Nara (Nara)	0.054
30	3/22 03:00 ~ 04:00	和歌山県	Wakayama (Wakaya	0.05
31	3/22 03:00 ~ 04:00	鳥取県	Tottori (Touhaku-g	0.064
32	3/22 03:00 ~ 04:00	島根県	Shimane (Matsue)	0.037
33	3/22 03:00 ~ 04:00	岡山県	Okayama (Okayama	0.051
34	3/22 03:00 ~ 04:00	広島県	Hiroshima (Hiroshin	0.049
35	3/22 03:00 ~ 04:00	山口県	Yamaguchi (Yamagu	0.09
36	3/22 03:00 ~ 04:00	徳島県	Tokushima (Tokush	0.048
37	3/22 03:00 ~ 04:00	香川県	Kagawa (Takamatsu	0.059
38	3/22 03:00 ~ 04:00	愛媛県	Ehime (Matsuyama)	0.054
39	3/22 03:00 ~ 04:00	高知県	Kochi (Kochi)	0.047
40	3/22 03:00 ~ 04:00	福岡県	Fukuoka (Dazaifu)	0.04
41	3/22 03:00 ~ 04:00	佐賀県	Saga (Saga)	0.047
42	3/22 03:00 ~ 04:00	長崎県	Nagasaki (Ohmura)	0.033
43	3/22 03:00 ~ 04:00	熊本県	Kumamoto (Uto)	0.029
44	3/22 03:00 ~ 04:00	大分県	Oita (Oita)	0.062
45	3/22 03:00 ~ 04:00	宮崎県	Miyazaki (Miyazaki)	0.033
46	3/22 03:00 ~ 04:00	鹿児島県	Kagoshima (Kagosh	0.036
47	3/22 03:00 ~ 04:00	沖縄県	Okinawa (Uruma)	0.021
1	3/22 04:00 ~ 05:00	北海道	Hokkaido (Sapporo)	0.028

2	3/22 04:00 ~ 05:00	青森県	Aomori (Aomori)	0.022
3	3/22 04:00 ~ 05:00	岩手県	Iwate (Morioka)	0.036
4	3/22 04:00 ~ 05:00	宮城県	Miyagi (Sendai)	
5	3/22 04:00 ~ 05:00	秋田県	Akita (Akita)	0.037
6	3/22 04:00 ~ 05:00	山形県	Yamagata (Yamaga	0.098
7	3/22 04:00 ~ 05:00	福島県	Fukushima (Futaba-gun)	
8	3/22 04:00 ~ 05:00	茨城県	Ibaraki (Mito)	0.311
9	3/22 04:00 ~ 05:00	栃木県	Tochigi (Itsunomiya	0.145
10	3/22 04:00 ~ 05:00	群馬県	Gunma (Maebashi)	0.119
11	3/22 04:00 ~ 05:00	埼玉県	Saitama (Saitama)	0.118
12	3/22 04:00 ~ 05:00	千葉県	Chiba (Ichihara)	0.088
13	3/22 04:00 ~ 05:00	東京都	Tokyo (Shinjuku-ku	0.133
14	3/22 04:00 ~ 05:00	神奈川県	Kanagawa (Chigasa	0.106
15	3/22 04:00 ~ 05:00	新潟県	Niigata (Niigata)	0.047
16	3/22 04:00 ~ 05:00	富山県	Toyama (Imizu)	0.047
17	3/22 04:00 ~ 05:00	石川県	Ishikawa (Kanazawa	0.047
18	3/22 04:00 ~ 05:00	福井県	Fukui (Fukui)	0.057
19	3/22 04:00 ~ 05:00	山梨県	Yamanashi (Kofu)	0.06
20	3/22 04:00 ~ 05:00	長野県	Nagano (Nagano)	0.062
21	3/22 04:00 ~ 05:00	岐阜県	Gifu (Kakamigahara	0.067
22	3/22 04:00 ~ 05:00	静岡県	Shizuoka (Shizuoka	0.065
23	3/22 04:00 ~ 05:00	愛知県	Aichi (Nagoya)	0.046
24	3/22 04:00 ~ 05:00	三重県	Mie (Yokkaichi)	0.05
25	3/22 04:00 ~ 05:00	滋賀県	Shiga (Ohtsu)	0.036
26	3/22 04:00 ~ 05:00	京都府	Kyoto (Kyoto)	0.043
27	3/22 04:00 ~ 05:00	大阪府	Osaka (Osaka)	0.049
28	3/22 04:00 ~ 05:00	兵庫県	Hyogo (Kobe)	0.04
29	3/22 04:00 ~ 05:00	奈良県	Nara (Nara)	0.054
30	3/22 04:00 ~ 05:00	和歌山県	Wakayama (Wakaya	0.047
31	3/22 04:00 ~ 05:00	鳥取県	Tottori (Touhaku-g	0.064
32	3/22 04:00 ~ 05:00	島根県	Shimane (Matsue)	0.037
33	3/22 04:00 ~ 05:00	岡山県	Okayama (Okayama	0.049
34	3/22 04:00 ~ 05:00	広島県	Hiroshima (Hiroshin	0.048
35	3/22 04:00 ~ 05:00	山口県	Yamaguchi (Yamagu	0.09
36	3/22 04:00 ~ 05:00	徳島県	Tokushima (Tokush	0.048
37	3/22 04:00 ~ 05:00	香川県	Kagawa (Takamatsu	0.056
38	3/22 04:00 ~ 05:00	愛媛県	Ehime (Matsuyama)	0.051
39	3/22 04:00 ~ 05:00	高知県	Kochi (Kochi)	0.042
40	3/22 04:00 ~ 05:00	福岡県	Fukuoka (Dazaifu)	0.037
41	3/22 04:00 ~ 05:00	佐賀県	Saga (Saga)	0.041
42	3/22 04:00 ~ 05:00	長崎県	Nagasaki (Ohmura)	0.03
43	3/22 04:00 ~ 05:00	熊本県	Kumamoto (Uto)	0.028
44	3/22 04:00 ~ 05:00	大分県	Oita (Oita)	0.054
45	3/22 04:00 ~ 05:00	宮崎県	Miyazaki (Miyazaki)	0.029
46	3/22 04:00 ~ 05:00	鹿児島県	Kagoshima (Kagosh	0.035
47	3/22 04:00 ~ 05:00	沖縄県	Okinawa (Uruma)	0.022
1	3/22 05:00 ~ 06:00	北海道	Hokkaido (Sapporo)	0.028
2	3/22 05:00 ~ 06:00	青森県	Aomori (Aomori)	0.022
3	3/22 05:00 ~ 06:00	岩手県	Iwate (Morioka)	0.036
4	3/22 05:00 ~ 06:00	宮城県	Miyagi (Sendai)	
5	3/22 05:00 ~ 06:00	秋田県	Akita (Akita)	0.037
6	3/22 05:00 ~ 06:00	山形県	Yamagata (Yamaga	0.099
7	3/22 05:00 ~ 06:00	福島県	Fukushima (Futaba-gun)	
8	3/22 05:00 ~ 06:00	茨城県	Ibaraki (Mito)	0.307
9	3/22 05:00 ~ 06:00	栃木県	Tochigi (Itsunomiya	0.142
10	3/22 05:00 ~ 06:00	群馬県	Gunma (Maebashi)	0.114
11	3/22 05:00 ~ 06:00	埼玉県	Saitama (Saitama)	0.115

12	3/22 05:00 ~ 06:00	千葉県	Chiba (Ichihara)	0.09
13	3/22 05:00 ~ 06:00	東京都	Tokyo (Shinjuku-kւ	0.133
14	3/22 05:00 ~ 06:00	神奈川県	Kanagawa (Chigasa	0.107
15	3/22 05:00 ~ 06:00	新潟県	Niigata (Niigata)	0.047
16	3/22 05:00 ~ 06:00	富山県	Toyama (Imizu)	0.047
17	3/22 05:00 ~ 06:00	石川県	Ishikawa (Kanazawa	0.047
18	3/22 05:00 ~ 06:00	福井県	Fukui (Fukui)	0.055
19	3/22 05:00 ~ 06:00	山梨県	Yamanashi (Kofu)	0.06
20	3/22 05:00 ~ 06:00	長野県	Nagano (Nagano)	0.06
21	3/22 05:00 ~ 06:00	岐阜県	Gifu (Kakamigahara	0.066
22	3/22 05:00 ~ 06:00	静岡県	Shizuoka (Shizuoka	0.068
23	3/22 05:00 ~ 06:00	愛知県	Aichi (Nagoya)	0.044
24	3/22 05:00 ~ 06:00	三重県	Mie (Yokkaichi)	0.049
25	3/22 05:00 ~ 06:00	滋賀県	Shiga (Ohtsu)	0.034
26	3/22 05:00 ~ 06:00	京都府	Kyoto (Kyoto)	0.04
27	3/22 05:00 ~ 06:00	大阪府	Osaka (Osaka)	0.046
28	3/22 05:00 ~ 06:00	兵庫県	Hyogo (Kobe)	0.037
29	3/22 05:00 ~ 06:00	奈良県	Nara (Nara)	0.052
30	3/22 05:00 ~ 06:00	和歌山県	Wakayama (Wakaya	0.044
31	3/22 05:00 ~ 06:00	鳥取県	Tottori (Touhaku-g	0.064
32	3/22 05:00 ~ 06:00	島根県	Shimane (Matsue)	0.037
33	3/22 05:00 ~ 06:00	岡山県	Okayama (Okayama	0.049
34	3/22 05:00 ~ 06:00	広島県	Hiroshima (Hiroshin	0.049
35	3/22 05:00 ~ 06:00	山口県	Yamaguchi (Yamagı	0.09
36	3/22 05:00 ~ 06:00	徳島県	Tokushima (Tokush	0.045
37	3/22 05:00 ~ 06:00	香川県	Kagawa (Takamatsı	0.053
38	3/22 05:00 ~ 06:00	愛媛県	Ehime (Matsuyama)	0.049
39	3/22 05:00 ~ 06:00	高知県	Kochi (Kochi)	0.034
40	3/22 05:00 ~ 06:00	福岡県	Fukuoka (Dazaifu)	0.036
41	3/22 05:00 ~ 06:00	佐賀県	Saga (Saga)	0.04
42	3/22 05:00 ~ 06:00	長崎県	Nagasaki (Ohmura)	0.029
43	3/22 05:00 ~ 06:00	熊本県	Kumamoto (Uto)	0.027
44	3/22 05:00 ~ 06:00	大分県	Oita (Oita)	0.05
45	3/22 05:00 ~ 06:00	宮崎県	Miyazaki (Miyazaki)	0.028
46	3/22 05:00 ~ 06:00	鹿児島県	Kagoshima (Kagosh	0.035
47	3/22 05:00 ~ 06:00	沖縄県	Okinawa (Uruma)	0.022
1	3/22 06:00 ~ 07:00	北海道	Hokkaido (Sapporo)	0.028
2	3/22 06:00 ~ 07:00	青森県	Aomori (Aomori)	0.022
3	3/22 06:00 ~ 07:00	岩手県	Iwate (Morioka)	0.036
4	3/22 06:00 ~ 07:00	宮城県	Miyagi (Sendai)	
5	3/22 06:00 ~ 07:00	秋田県	Akita (Akita)	0.037
6	3/22 06:00 ~ 07:00	山形県	Yamagata (Yamaga	0.098
7	3/22 06:00 ~ 07:00	福島県	Fukushima (Futaba-gun)	
8	3/22 06:00 ~ 07:00	茨城県	Ibaraki (Mito)	0.314
9	3/22 06:00 ~ 07:00	栃木県	Tochigi (Itsunomiya	0.141
10	3/22 06:00 ~ 07:00	群馬県	Gunma (Maebashi)	0.112
11	3/22 06:00 ~ 07:00	埼玉県	Saitama (Saitama)	0.116
12	3/22 06:00 ~ 07:00	千葉県	Chiba (Ichihara)	0.09
13	3/22 06:00 ~ 07:00	東京都	Tokyo (Shinjuku-kւ	0.131
14	3/22 06:00 ~ 07:00	神奈川県	Kanagawa (Chigasa	0.109
15	3/22 06:00 ~ 07:00	新潟県	Niigata (Niigata)	0.047
16	3/22 06:00 ~ 07:00	富山県	Toyama (Imizu)	0.047
17	3/22 06:00 ~ 07:00	石川県	Ishikawa (Kanazawa	0.047
18	3/22 06:00 ~ 07:00	福井県	Fukui (Fukui)	0.054
19	3/22 06:00 ~ 07:00	山梨県	Yamanashi (Kofu)	0.059
20	3/22 06:00 ~ 07:00	長野県	Nagano (Nagano)	0.058
21	3/22 06:00 ~ 07:00	岐阜県	Gifu (Kakamigahara	0.063

22	3/22 06:00 ~ 07:00	静岡県	Shizuoka (Shizuoka	0.066
23	3/22 06:00 ~ 07:00	愛知県	Aichi (Nagoya)	0.042
24	3/22 06:00 ~ 07:00	三重県	Mie (Yokkaichi)	0.046
25	3/22 06:00 ~ 07:00	滋賀県	Shiga (Ohtsu)	0.033
26	3/22 06:00 ~ 07:00	京都府	Kyoto (Kyoto)	0.038
27	3/22 06:00 ~ 07:00	大阪府	Osaka (Osaka)	0.043
28	3/22 06:00 ~ 07:00	兵庫県	Hyogo (Kobe)	0.036
29	3/22 06:00 ~ 07:00	奈良県	Nara (Nara)	0.049
30	3/22 06:00 ~ 07:00	和歌山県	Wakayama (Wakaya	0.037
31	3/22 06:00 ~ 07:00	鳥取県	Tottori (Touhaku-g	0.063
32	3/22 06:00 ~ 07:00	島根県	Shimane (Matsue)	0.038
33	3/22 06:00 ~ 07:00	岡山県	Okayama (Okayama	0.049
34	3/22 06:00 ~ 07:00	広島県	Hiroshima (Hiroshin	0.05
35	3/22 06:00 ~ 07:00	山口県	Yamaguchi (Yamagı	0.09
36	3/22 06:00 ~ 07:00	徳島県	Tokushima (Tokush	0.04
37	3/22 06:00 ~ 07:00	香川県	Kagawa (Takamatsı	0.052
38	3/22 06:00 ~ 07:00	愛媛県	Ehime (Matsuyama	0.049
39	3/22 06:00 ~ 07:00	高知県	Kochi (Kochi)	0.027
40	3/22 06:00 ~ 07:00	福岡県	Fukuoka (Dazaifu)	0.036
41	3/22 06:00 ~ 07:00	佐賀県	Saga (Saga)	0.039
42	3/22 06:00 ~ 07:00	長崎県	Nagasaki (Ohmura)	0.029
43	3/22 06:00 ~ 07:00	熊本県	Kumamoto (Uto)	0.027
44	3/22 06:00 ~ 07:00	大分県	Oita (Oita)	0.05
45	3/22 06:00 ~ 07:00	宮崎県	Miyazaki (Miyazaki)	0.027
46	3/22 06:00 ~ 07:00	鹿児島県	Kagoshima (Kagosh	0.034
47	3/22 06:00 ~ 07:00	沖縄県	Okinawa (Uruma)	0.022
1	3/22 07:00 ~ 08:00	北海道	Hokkaido (Sapporo	0.028
2	3/22 07:00 ~ 08:00	青森県	Aomori (Aomori)	0.022
3	3/22 07:00 ~ 08:00	岩手県	Iwate (Morioka)	0.036
4	3/22 07:00 ~ 08:00	宮城県	Miyagi (Sendai)	
5	3/22 07:00 ~ 08:00	秋田県	Akita (Akita)	0.037
6	3/22 07:00 ~ 08:00	山形県	Yamagata (Yamaga	0.098
7	3/22 07:00 ~ 08:00	福島県	Fukushima (Futaba-gun)	
8	3/22 07:00 ~ 08:00	茨城県	Ibaraki (Mito)	0.351
9	3/22 07:00 ~ 08:00	栃木県	Tochigi (Itsunomiya	0.141
10	3/22 07:00 ~ 08:00	群馬県	Gunma (Maebashi)	0.112
11	3/22 07:00 ~ 08:00	埼玉県	Saitama (Saitama)	0.116
12	3/22 07:00 ~ 08:00	千葉県	Chiba (Ichihara)	0.088
13	3/22 07:00 ~ 08:00	東京都	Tokyo (Shinjuku-ku	0.129
14	3/22 07:00 ~ 08:00	神奈川県	Kanagawa (Chigasa	0.107
15	3/22 07:00 ~ 08:00	新潟県	Niigata (Niigata)	0.048
16	3/22 07:00 ~ 08:00	富山県	Toyama (Imizu)	0.047
17	3/22 07:00 ~ 08:00	石川県	Ishikawa (Kanazawa	0.047
18	3/22 07:00 ~ 08:00	福井県	Fukui (Fukui)	0.051
19	3/22 07:00 ~ 08:00	山梨県	Yamanashi (Kofu)	0.058
20	3/22 07:00 ~ 08:00	長野県	Nagano (Nagano)	0.056
21	3/22 07:00 ~ 08:00	岐阜県	Gifu (Kakamigahara	0.062
22	3/22 07:00 ~ 08:00	静岡県	Shizuoka (Shizuoka	0.064
23	3/22 07:00 ~ 08:00	愛知県	Aichi (Nagoya)	0.041
24	3/22 07:00 ~ 08:00	三重県	Mie (Yokkaichi)	0.046
25	3/22 07:00 ~ 08:00	滋賀県	Shiga (Ohtsu)	0.033
26	3/22 07:00 ~ 08:00	京都府	Kyoto (Kyoto)	0.038
27	3/22 07:00 ~ 08:00	大阪府	Osaka (Osaka)	0.043
28	3/22 07:00 ~ 08:00	兵庫県	Hyogo (Kobe)	0.036
29	3/22 07:00 ~ 08:00	奈良県	Nara (Nara)	0.048
30	3/22 07:00 ~ 08:00	和歌山県	Wakayama (Wakaya	0.033
31	3/22 07:00 ~ 08:00	鳥取県	Tottori (Touhaku-g	0.064

32	3/22 07:00 ~ 08:00	島根県	Shimane (Matsue)	0.038
33	3/22 07:00 ~ 08:00	岡山県	Okayama (Okayama	0.049
34	3/22 07:00 ~ 08:00	広島県	Hiroshima (Hiroshin	0.05
35	3/22 07:00 ~ 08:00	山口県	Yamaguchi (Yamagı	0.09
36	3/22 07:00 ~ 08:00	徳島県	Tokushima (Tokush	0.038
37	3/22 07:00 ~ 08:00	香川県	Kagawa (Takamatsı	0.051
38	3/22 07:00 ~ 08:00	愛媛県	Ehime (Matsuyama	0.048
39	3/22 07:00 ~ 08:00	高知県	Kochi (Kochi)	0.025
40	3/22 07:00 ~ 08:00	福岡県	Fukuoka (Dazaifu)	0.036
41	3/22 07:00 ~ 08:00	佐賀県	Saga (Saga)	0.039
42	3/22 07:00 ~ 08:00	長崎県	Nagasaki (Ohmura)	0.029
43	3/22 07:00 ~ 08:00	熊本県	Kumamoto (Uto)	0.027
44	3/22 07:00 ~ 08:00	大分県	Oita (Oita)	0.049
45	3/22 07:00 ~ 08:00	宮崎県	Miyazaki (Miyazaki)	0.027
46	3/22 07:00 ~ 08:00	鹿児島県	Kagoshima (Kagosh	0.034
47	3/22 07:00 ~ 08:00	沖縄県	Okinawa (Uruma)	0.022
1	3/22 08:00 ~ 09:00	北海道	Hokkaido (Sapporo	0.028
2	3/22 08:00 ~ 09:00	青森県	Aomori (Aomori)	0.022
3	3/22 08:00 ~ 09:00	岩手県	Iwate (Morioka)	0.036
4	3/22 08:00 ~ 09:00	宮城県	Miyagi (Sendai)	
5	3/22 08:00 ~ 09:00	秋田県	Akita (Akita)	0.036
6	3/22 08:00 ~ 09:00	山形県	Yamagata (Yamaga	0.098
7	3/22 08:00 ~ 09:00	福島県	Fukushima (Futaba-gun)	
8	3/22 08:00 ~ 09:00	茨城県	Ibaraki (Mito)	0.394
9	3/22 08:00 ~ 09:00	栃木県	Tochigi (Itsunomiya	0.144
10	3/22 08:00 ~ 09:00	群馬県	Gunma (Maebashi)	0.112
11	3/22 08:00 ~ 09:00	埼玉県	Saitama (Saitama)	0.113
12	3/22 08:00 ~ 09:00	千葉県	Chiba (Ichihara)	0.085
13	3/22 08:00 ~ 09:00	東京都	Tokyo (Shinjuku-kι	0.128
14	3/22 08:00 ~ 09:00	神奈川県	Kanagawa (Chigasa	0.105
15	3/22 08:00 ~ 09:00	新潟県	Niigata (Niigata)	0.047
16	3/22 08:00 ~ 09:00	富山県	Toyama (Imizu)	0.047
17	3/22 08:00 ~ 09:00	石川県	Ishikawa (Kanazawa	0.048
18	3/22 08:00 ~ 09:00	福井県	Fukui (Fukui)	0.048
19	3/22 08:00 ~ 09:00	山梨県	Yamanashi (Kofu)	0.059
20	3/22 08:00 ~ 09:00	長野県	Nagano (Nagano)	0.055
21	3/22 08:00 ~ 09:00	岐阜県	Gifu (Kakamigahara	0.061
22	3/22 08:00 ~ 09:00	静岡県	Shizuoka (Shizuoka	0.065
23	3/22 08:00 ~ 09:00	愛知県	Aichi (Nagoya)	0.04
24	3/22 08:00 ~ 09:00	三重県	Mie (Yokkaichi)	0.046
25	3/22 08:00 ~ 09:00	滋賀県	Shiga (Ohtsu)	0.033
26	3/22 08:00 ~ 09:00	京都府	Kyoto (Kyoto)	0.038
27	3/22 08:00 ~ 09:00	大阪府	Osaka (Osaka)	0.043
28	3/22 08:00 ~ 09:00	兵庫県	Hyogo (Kobe)	0.037
29	3/22 08:00 ~ 09:00	奈良県	Nara (Nara)	0.047
30	3/22 08:00 ~ 09:00	和歌山県	Wakayama (Wakaya	0.032
31	3/22 08:00 ~ 09:00	鳥取県	Tottori (Touhaku-g	0.063
32	3/22 08:00 ~ 09:00	島根県	Shimane (Matsue)	0.038
33	3/22 08:00 ~ 09:00	岡山県	Okayama (Okayama	0.049
34	3/22 08:00 ~ 09:00	広島県	Hiroshima (Hiroshin	0.049
35	3/22 08:00 ~ 09:00	山口県	Yamaguchi (Yamagı	0.09
36	3/22 08:00 ~ 09:00	徳島県	Tokushima (Tokush	0.038
37	3/22 08:00 ~ 09:00	香川県	Kagawa (Takamatsı	0.051
38	3/22 08:00 ~ 09:00	愛媛県	Ehime (Matsuyama	0.048
39	3/22 08:00 ~ 09:00	高知県	Kochi (Kochi)	0.025
40	3/22 08:00 ~ 09:00	福岡県	Fukuoka (Dazaifu)	0.036
41	3/22 08:00 ~ 09:00	佐賀県	Saga (Saga)	0.039

42	3/22 08:00 ~ 09:00	長崎県	Nagasaki (Ohmura)	0.03
43	3/22 08:00 ~ 09:00	熊本県	Kumamoto (Uto)	0.026
44	3/22 08:00 ~ 09:00	大分県	Oita (Oita)	0.05
45	3/22 08:00 ~ 09:00	宮崎県	Miyazaki (Miyazaki)	0.027
46	3/22 08:00 ~ 09:00	鹿児島県	Kagoshima (Kagosh	0.034
47	3/22 08:00 ~ 09:00	沖縄県	Okinawa (Uruma)	0.022
1	3/22 09:00 ~ 10:00	北海道	Hokkaido (Sapporo)	0.028
2	3/22 09:00 ~ 10:00	青森県	Aomori (Aomori)	0.022
3	3/22 09:00 ~ 10:00	岩手県	Iwate (Morioka)	0.035
4	3/22 09:00 ~ 10:00	宮城県	Miyagi (Sendai)	
5	3/22 09:00 ~ 10:00	秋田県	Akita (Akita)	0.036
6	3/22 09:00 ~ 10:00	山形県	Yamagata (Yamaga	0.097
7	3/22 09:00 ~ 10:00	福島県	Fukushima (Futaba-gun)	
8	3/22 09:00 ~ 10:00	茨城県	Ibaraki (Mito)	0.389
9	3/22 09:00 ~ 10:00	栃木県	Tochigi (Itsunomiya	0.151
10	3/22 09:00 ~ 10:00	群馬県	Gunma (Maebashi)	0.109
11	3/22 09:00 ~ 10:00	埼玉県	Saitama (Saitama)	0.111
12	3/22 09:00 ~ 10:00	千葉県	Chiba (Ichihara)	0.082
13	3/22 09:00 ~ 10:00	東京都	Tokyo (Shinjuku-ku	0.127
14	3/22 09:00 ~ 10:00	神奈川県	Kanagawa (Chigasa	0.105
15	3/22 09:00 ~ 10:00	新潟県	Niigata (Niigata)	0.047
16	3/22 09:00 ~ 10:00	富山県	Toyama (Imizu)	0.047
17	3/22 09:00 ~ 10:00	石川県	Ishikawa (Kanazawa	0.047
18	3/22 09:00 ~ 10:00	福井県	Fukui (Fukui)	0.045
19	3/22 09:00 ~ 10:00	山梨県	Yamanashi (Kofu)	0.059
20	3/22 09:00 ~ 10:00	長野県	Nagano (Nagano)	0.054
21	3/22 09:00 ~ 10:00	岐阜県	Gifu (Kakamigahara	0.06
22	3/22 09:00 ~ 10:00	静岡県	Shizuoka (Shizuoka	0.064
23	3/22 09:00 ~ 10:00	愛知県	Aichi (Nagoya)	0.039
24	3/22 09:00 ~ 10:00	三重県	Mie (Yokkaichi)	0.046
25	3/22 09:00 ~ 10:00	滋賀県	Shiga (Ohtsu)	0.033
26	3/22 09:00 ~ 10:00	京都府	Kyoto (Kyoto)	0.038
27	3/22 09:00 ~ 10:00	大阪府	Osaka (Osaka)	0.042
28	3/22 09:00 ~ 10:00	兵庫県	Hyogo (Kobe)	0.036
29	3/22 09:00 ~ 10:00	奈良県	Nara (Nara)	0.047
30	3/22 09:00 ~ 10:00	和歌山県	Wakayama (Wakaya	0.031
31	3/22 09:00 ~ 10:00	鳥取県	Tottori (Touhaku-g	0.063
32	3/22 09:00 ~ 10:00	島根県	Shimane (Matsue)	0.037
33	3/22 09:00 ~ 10:00	岡山県	Okayama (Okayama	0.049
34	3/22 09:00 ~ 10:00	広島県	Hiroshima (Hiroshin	0.049
35	3/22 09:00 ~ 10:00	山口県	Yamaguchi (Yamagu	0.09
36	3/22 09:00 ~ 10:00	徳島県	Tokushima (Tokush	0.037
37	3/22 09:00 ~ 10:00	香川県	Kagawa (Takamatsu	0.052
38	3/22 09:00 ~ 10:00	愛媛県	Ehime (Matsuyama)	0.047
39	3/22 09:00 ~ 10:00	高知県	Kochi (Kochi)	0.025
40	3/22 09:00 ~ 10:00	福岡県	Fukuoka (Dazaifu)	0.036
41	3/22 09:00 ~ 10:00	佐賀県	Saga (Saga)	0.04
42	3/22 09:00 ~ 10:00	長崎県	Nagasaki (Ohmura)	0.03
43	3/22 09:00 ~ 10:00	熊本県	Kumamoto (Uto)	0.026
44	3/22 09:00 ~ 10:00	大分県	Oita (Oita)	0.05
45	3/22 09:00 ~ 10:00	宮崎県	Miyazaki (Miyazaki)	0.027
46	3/22 09:00 ~ 10:00	鹿児島県	Kagoshima (Kagosh	0.034
47	3/22 09:00 ~ 10:00	沖縄県	Okinawa (Uruma)	0.023
1	3/22 10:00 ~ 11:00	北海道	Hokkaido (Sapporo)	0.028
2	3/22 10:00 ~ 11:00	青森県	Aomori (Aomori)	0.022
3	3/22 10:00 ~ 11:00	岩手県	Iwate (Morioka)	0.034
4	3/22 10:00 ~ 11:00	宮城県	Miyagi (Sendai)	

5	3/22 10:00 ~ 11:00	秋田県	Akita (Akita)	0.035
6	3/22 10:00 ~ 11:00	山形県	Yamagata (Yamaga	0.097
7	3/22 10:00 ~ 11:00	福島県	Fukushima (Futaba-gun)	
8	3/22 10:00 ~ 11:00	茨城県	Ibaraki (Mito)	0.374
9	3/22 10:00 ~ 11:00	栃木県	Tochigi (Itsunomiya	0.152
10	3/22 10:00 ~ 11:00	群馬県	Gunma (Maebashi)	0.108
11	3/22 10:00 ~ 11:00	埼玉県	Saitama (Saitama)	0.112
12	3/22 10:00 ~ 11:00	千葉県	Chiba (Ichihara)	0.079
13	3/22 10:00 ~ 11:00	東京都	Tokyo (Shinjuku-ku	0.127
14	3/22 10:00 ~ 11:00	神奈川県	Kanagawa (Chigasa	0.1
15	3/22 10:00 ~ 11:00	新潟県	Niigata (Niigata)	0.047
16	3/22 10:00 ~ 11:00	富山県	Toyama (Imizu)	0.047
17	3/22 10:00 ~ 11:00	石川県	Ishikawa (Kanazawa	0.047
18	3/22 10:00 ~ 11:00	福井県	Fukui (Fukui)	0.045
19	3/22 10:00 ~ 11:00	山梨県	Yamanashi (Kofu)	0.054
20	3/22 10:00 ~ 11:00	長野県	Nagano (Nagano)	0.054
21	3/22 10:00 ~ 11:00	岐阜県	Gifu (Kakamigahara	0.06
22	3/22 10:00 ~ 11:00	静岡県	Shizuoka (Shizuoka	0.061
23	3/22 10:00 ~ 11:00	愛知県	Aichi (Nagoya)	0.039
24	3/22 10:00 ~ 11:00	三重県	Mie (Yokkaichi)	0.046
25	3/22 10:00 ~ 11:00	滋賀県	Shiga (Ohtsu)	0.033
26	3/22 10:00 ~ 11:00	京都府	Kyoto (Kyoto)	0.037
27	3/22 10:00 ~ 11:00	大阪府	Osaka (Osaka)	0.042
28	3/22 10:00 ~ 11:00	兵庫県	Hyogo (Kobe)	0.036
29	3/22 10:00 ~ 11:00	奈良県	Nara (Nara)	0.047
30	3/22 10:00 ~ 11:00	和歌山県	Wakayama (Wakaya	0.031
31	3/22 10:00 ~ 11:00	鳥取県	Tottori (Touhaku-g	0.064
32	3/22 10:00 ~ 11:00	島根県	Shimane (Matsue)	0.036
33	3/22 10:00 ~ 11:00	岡山県	Okayama (Okayama	0.048
34	3/22 10:00 ~ 11:00	広島県	Hiroshima (Hiroshin	0.048
35	3/22 10:00 ~ 11:00	山口県	Yamaguchi (Yamagu	0.089
36	3/22 10:00 ~ 11:00	徳島県	Tokushima (Tokush	0.038
37	3/22 10:00 ~ 11:00	香川県	Kagawa (Takamatsu	0.052
38	3/22 10:00 ~ 11:00	愛媛県	Ehime (Matsuyama	0.047
39	3/22 10:00 ~ 11:00	高知県	Kochi (Kochi)	0.024
40	3/22 10:00 ~ 11:00	福岡県	Fukuoka (Dazaifu)	0.036
41	3/22 10:00 ~ 11:00	佐賀県	Saga (Saga)	0.04
42	3/22 10:00 ~ 11:00	長崎県	Nagasaki (Ohmura)	0.03
43	3/22 10:00 ~ 11:00	熊本県	Kumamoto (Uto)	0.027
44	3/22 10:00 ~ 11:00	大分県	Oita (Oita)	0.05
45	3/22 10:00 ~ 11:00	宮崎県	Miyazaki (Miyazaki)	0.027
46	3/22 10:00 ~ 11:00	鹿児島県	Kagoshima (Kagosh	0.034
47	3/22 10:00 ~ 11:00	沖縄県	Okinawa (Uruma)	0.023
1	3/22 11:00 ~ 12:00	北海道	Hokkaido (Sapporo)	0.028
2	3/22 11:00 ~ 12:00	青森県	Aomori (Aomori)	0.022
3	3/22 11:00 ~ 12:00	岩手県	Iwate (Morioka)	0.033
4	3/22 11:00 ~ 12:00	宮城県	Miyagi (Sendai)	
5	3/22 11:00 ~ 12:00	秋田県	Akita (Akita)	0.035
6	3/22 11:00 ~ 12:00	山形県	Yamagata (Yamaga	0.096
7	3/22 11:00 ~ 12:00	福島県	Fukushima (Futaba-gun)	
8	3/22 11:00 ~ 12:00	茨城県	Ibaraki (Mito)	0.379
9	3/22 11:00 ~ 12:00	栃木県	Tochigi (Itsunomiya	0.153
10	3/22 11:00 ~ 12:00	群馬県	Gunma (Maebashi)	0.109
11	3/22 11:00 ~ 12:00	埼玉県	Saitama (Saitama)	0.112
12	3/22 11:00 ~ 12:00	千葉県	Chiba (Ichihara)	0.083
13	3/22 11:00 ~ 12:00	東京都	Tokyo (Shinjuku-ku	0.128
14	3/22 11:00 ~ 12:00	神奈川県	Kanagawa (Chigasa	0.099

15	3/22 11:00 ~ 12:00	新潟県	Niigata (Niigata)	0.047
16	3/22 11:00 ~ 12:00	富山県	Toyama (Imizu)	0.047
17	3/22 11:00 ~ 12:00	石川県	Ishikawa (Kanazawa	0.047
18	3/22 11:00 ~ 12:00	福井県	Fukui (Fukui)	0.045
19	3/22 11:00 ~ 12:00	山梨県	Yamanashi (Kofu)	0.049
20	3/22 11:00 ~ 12:00	長野県	Nagano (Nagano)	0.055
21	3/22 11:00 ~ 12:00	岐阜県	Gifu (Kakamigahara	0.06
22	3/22 11:00 ~ 12:00	静岡県	Shizuoka (Shizuoka	0.061
23	3/22 11:00 ~ 12:00	愛知県	Aichi (Nagoya)	0.039
24	3/22 11:00 ~ 12:00	三重県	Mie (Yokkaichi)	0.046
25	3/22 11:00 ~ 12:00	滋賀県	Shiga (Ohtsu)	0.032
26	3/22 11:00 ~ 12:00	京都府	Kyoto (Kyoto)	0.037
27	3/22 11:00 ~ 12:00	大阪府	Osaka (Osaka)	0.042
28	3/22 11:00 ~ 12:00	兵庫県	Hyogo (Kobe)	0.037
29	3/22 11:00 ~ 12:00	奈良県	Nara (Nara)	0.047
30	3/22 11:00 ~ 12:00	和歌山県	Wakayama (Wakaya	0.031
31	3/22 11:00 ~ 12:00	鳥取県	Tottori (Touhaku-g	0.063
32	3/22 11:00 ~ 12:00	島根県	Shimane (Matsue)	0.036
33	3/22 11:00 ~ 12:00	岡山県	Okayama (Okayama	0.048
34	3/22 11:00 ~ 12:00	広島県	Hiroshima (Hiroshin	0.046
35	3/22 11:00 ~ 12:00	山口県	Yamaguchi (Yamagı	0.09
36	3/22 11:00 ~ 12:00	徳島県	Tokushima (Tokush	0.038
37	3/22 11:00 ~ 12:00	香川県	Kagawa (Takamatsı	0.053
38	3/22 11:00 ~ 12:00	愛媛県	Ehime (Matsuyama)	0.047
39	3/22 11:00 ~ 12:00	高知県	Kochi (Kochi)	0.025
40	3/22 11:00 ~ 12:00	福岡県	Fukuoka (Dazaifu)	0.036
41	3/22 11:00 ~ 12:00	佐賀県	Saga (Saga)	0.04
42	3/22 11:00 ~ 12:00	長崎県	Nagasaki (Ohmura)	0.029
43	3/22 11:00 ~ 12:00	熊本県	Kumamoto (Uto)	0.027
44	3/22 11:00 ~ 12:00	大分県	Oita (Oita)	0.05
45	3/22 11:00 ~ 12:00	宮崎県	Miyazaki (Miyazaki)	0.026
46	3/22 11:00 ~ 12:00	鹿児島県	Kagoshima (Kagosh	0.034
47	3/22 11:00 ~ 12:00	沖縄県	Okinawa (Uruma)	0.022
1	3/22 12:00 ~ 13:00	北海道	Hokkaido (Sapporo)	0.028
2	3/22 12:00 ~ 13:00	青森県	Aomori (Aomori)	0.022
3	3/22 12:00 ~ 13:00	岩手県	Iwate (Morioka)	0.033
4	3/22 12:00 ~ 13:00	宮城県	Miyagi (Sendai)	
5	3/22 12:00 ~ 13:00	秋田県	Akita (Akita)	0.035
6	3/22 12:00 ~ 13:00	山形県	Yamagata (Yamaga	0.096
7	3/22 12:00 ~ 13:00	福島県	Fukushima (Futaba-gun)	
8	3/22 12:00 ~ 13:00	茨城県	Ibaraki (Mito)	0.376
9	3/22 12:00 ~ 13:00	栃木県	Tochigi (Itsunomiya	0.154
10	3/22 12:00 ~ 13:00	群馬県	Gunma (Maebashi)	0.11
11	3/22 12:00 ~ 13:00	埼玉県	Saitama (Saitama)	0.109
12	3/22 12:00 ~ 13:00	千葉県	Chiba (Ichihara)	0.086
13	3/22 12:00 ~ 13:00	東京都	Tokyo (Shinjuku-kı	0.128
14	3/22 12:00 ~ 13:00	神奈川県	Kanagawa (Chigasa	0.097
15	3/22 12:00 ~ 13:00	新潟県	Niigata (Niigata)	0.047
16	3/22 12:00 ~ 13:00	富山県	Toyama (Imizu)	0.048
17	3/22 12:00 ~ 13:00	石川県	Ishikawa (Kanazawa	0.047
18	3/22 12:00 ~ 13:00	福井県	Fukui (Fukui)	0.045
19	3/22 12:00 ~ 13:00	山梨県	Yamanashi (Kofu)	0.048
20	3/22 12:00 ~ 13:00	長野県	Nagano (Nagano)	0.055
21	3/22 12:00 ~ 13:00	岐阜県	Gifu (Kakamigahara	0.061
22	3/22 12:00 ~ 13:00	静岡県	Shizuoka (Shizuoka	0.057
23	3/22 12:00 ~ 13:00	愛知県	Aichi (Nagoya)	0.039
24	3/22 12:00 ~ 13:00	三重県	Mie (Yokkaichi)	0.046

25	3/22 12:00 ~ 13:00	滋賀県	Shiga (Ohtsu)	0.032
26	3/22 12:00 ~ 13:00	京都府	Kyoto (Kyoto)	0.037
27	3/22 12:00 ~ 13:00	大阪府	Osaka (Osaka)	0.042
28	3/22 12:00 ~ 13:00	兵庫県	Hyogo (Kobe)	0.037
29	3/22 12:00 ~ 13:00	奈良県	Nara (Nara)	0.047
30	3/22 12:00 ~ 13:00	和歌山県	Wakayama (Wakaya	0.032
31	3/22 12:00 ~ 13:00	鳥取県	Tottori (Touhaku-g	0.063
32	3/22 12:00 ~ 13:00	島根県	Shimane (Matsue)	0.036
33	3/22 12:00 ~ 13:00	岡山県	Okayama (Okayama	0.048
34	3/22 12:00 ~ 13:00	広島県	Hiroshima (Hiroshin	0.047
35	3/22 12:00 ~ 13:00	山口県	Yamaguchi (Yamagı	0.09
36	3/22 12:00 ~ 13:00	徳島県	Tokushima (Tokush	0.037
37	3/22 12:00 ~ 13:00	香川県	Kagawa (Takamatsı	0.052
38	3/22 12:00 ~ 13:00	愛媛県	Ehime (Matsuyama	0.047
39	3/22 12:00 ~ 13:00	高知県	Kochi (Kochi)	0.025
40	3/22 12:00 ~ 13:00	福岡県	Fukuoka (Dazaifu)	0.036
41	3/22 12:00 ~ 13:00	佐賀県	Saga (Saga)	0.04
42	3/22 12:00 ~ 13:00	長崎県	Nagasaki (Ohmura)	0.03
43	3/22 12:00 ~ 13:00	熊本県	Kumamoto (Uto)	0.027
44	3/22 12:00 ~ 13:00	大分県	Oita (Oita)	0.05
45	3/22 12:00 ~ 13:00	宮崎県	Miyazaki (Miyazaki)	0.026
46	3/22 12:00 ~ 13:00	鹿児島県	Kagoshima (Kagosh	0.035
47	3/22 12:00 ~ 13:00	沖縄県	Okinawa (Uruma)	0.021
1	3/22 13:00 ~ 14:00	北海道	Hokkaido (Sapporo	0.028
2	3/22 13:00 ~ 14:00	青森県	Aomori (Aomori)	0.022
3	3/22 13:00 ~ 14:00	岩手県	Iwate (Morioka)	0.033
4	3/22 13:00 ~ 14:00	宮城県	Miyagi (Sendai)	
5	3/22 13:00 ~ 14:00	秋田県	Akita (Akita)	0.035
6	3/22 13:00 ~ 14:00	山形県	Yamagata (Yamaga	0.096
7	3/22 13:00 ~ 14:00	福島県	Fukushima (Futaba-gun)	
8	3/22 13:00 ~ 14:00	茨城県	Ibaraki (Mito)	0.373
9	3/22 13:00 ~ 14:00	栃木県	Tochigi (Itsunomiya	0.152
10	3/22 13:00 ~ 14:00	群馬県	Gunma (Maebashi)	0.111
11	3/22 13:00 ~ 14:00	埼玉県	Saitama (Saitama)	0.11
12	3/22 13:00 ~ 14:00	千葉県	Chiba (Ichihara)	0.085
13	3/22 13:00 ~ 14:00	東京都	Tokyo (Shinjuku-kı	0.13
14	3/22 13:00 ~ 14:00	神奈川県	Kanagawa (Chigasa	0.095
15	3/22 13:00 ~ 14:00	新潟県	Niigata (Niigata)	0.047
16	3/22 13:00 ~ 14:00	富山県	Toyama (Imizu)	0.048
17	3/22 13:00 ~ 14:00	石川県	Ishikawa (Kanazawa	0.047
18	3/22 13:00 ~ 14:00	福井県	Fukui (Fukui)	0.045
19	3/22 13:00 ~ 14:00	山梨県	Yamanashi (Kofu)	0.047
20	3/22 13:00 ~ 14:00	長野県	Nagano (Nagano)	0.054
21	3/22 13:00 ~ 14:00	岐阜県	Gifu (Kakamigahara	0.06
22	3/22 13:00 ~ 14:00	静岡県	Shizuoka (Shizuoka	0.053
23	3/22 13:00 ~ 14:00	愛知県	Aichi (Nagoya)	0.039
24	3/22 13:00 ~ 14:00	三重県	Mie (Yokkaichi)	0.046
25	3/22 13:00 ~ 14:00	滋賀県	Shiga (Ohtsu)	0.033
26	3/22 13:00 ~ 14:00	京都府	Kyoto (Kyoto)	0.037
27	3/22 13:00 ~ 14:00	大阪府	Osaka (Osaka)	0.042
28	3/22 13:00 ~ 14:00	兵庫県	Hyogo (Kobe)	0.037
29	3/22 13:00 ~ 14:00	奈良県	Nara (Nara)	0.047
30	3/22 13:00 ~ 14:00	和歌山県	Wakayama (Wakaya	0.031
31	3/22 13:00 ~ 14:00	鳥取県	Tottori (Touhaku-g	0.065
32	3/22 13:00 ~ 14:00	島根県	Shimane (Matsue)	0.037
33	3/22 13:00 ~ 14:00	岡山県	Okayama (Okayama	0.048
34	3/22 13:00 ~ 14:00	広島県	Hiroshima (Hiroshin	0.047

35	3/22 13:00 ~ 14:00	山口県	Yamaguchi (Yamagı	0.09
36	3/22 13:00 ~ 14:00	徳島県	Tokushima (Tokush	0.037
37	3/22 13:00 ~ 14:00	香川県	Kagawa (Takamatsı	0.053
38	3/22 13:00 ~ 14:00	愛媛県	Ehime (Matsuyama)	0.048
39	3/22 13:00 ~ 14:00	高知県	Kochi (Kochi)	0.025
40	3/22 13:00 ~ 14:00	福岡県	Fukuoka (Dazaifu)	0.036
41	3/22 13:00 ~ 14:00	佐賀県	Saga (Saga)	0.04
42	3/22 13:00 ~ 14:00	長崎県	Nagasaki (Ohmura)	0.03
43	3/22 13:00 ~ 14:00	熊本県	Kumamoto (Uto)	0.027
44	3/22 13:00 ~ 14:00	大分県	Oita (Oita)	0.05
45	3/22 13:00 ~ 14:00	宮崎県	Miyazaki (Miyazaki)	0.026
46	3/22 13:00 ~ 14:00	鹿児島県	Kagoshima (Kagosh	0.035
47	3/22 13:00 ~ 14:00	沖縄県	Okinawa (Uruma)	0.021
1	3/22 14:00 ~ 15:00	北海道	Hokkaido (Sapporo)	0.028
2	3/22 14:00 ~ 15:00	青森県	Aomori (Aomori)	0.022
3	3/22 14:00 ~ 15:00	岩手県	Iwate (Morioka)	0.033
4	3/22 14:00 ~ 15:00	宮城県	Miyagi (Sendai)	
5	3/22 14:00 ~ 15:00	秋田県	Akita (Akita)	0.035
6	3/22 14:00 ~ 15:00	山形県	Yamagata (Yamaga	0.096
7	3/22 14:00 ~ 15:00	福島県	Fukushima (Futaba-gun)	
8	3/22 14:00 ~ 15:00	茨城県	Ibaraki (Mito)	0.365
9	3/22 14:00 ~ 15:00	栃木県	Tochigi (Itsunomiya	0.151
10	3/22 14:00 ~ 15:00	群馬県	Gunma (Maebashi)	0.11
11	3/22 14:00 ~ 15:00	埼玉県	Saitama (Saitama)	0.113
12	3/22 14:00 ~ 15:00	千葉県	Chiba (Ichihara)	0.085
13	3/22 14:00 ~ 15:00	東京都	Tokyo (Shinjuku-ku	0.137
14	3/22 14:00 ~ 15:00	神奈川県	Kanagawa (Chigasa	0.096
15	3/22 14:00 ~ 15:00	新潟県	Niigata (Niigata)	0.046
16	3/22 14:00 ~ 15:00	富山県	Toyama (Imizu)	0.048
17	3/22 14:00 ~ 15:00	石川県	Ishikawa (Kanazawa	0.047
18	3/22 14:00 ~ 15:00	福井県	Fukui (Fukui)	0.045
19	3/22 14:00 ~ 15:00	山梨県	Yamanashi (Kofu)	0.047
20	3/22 14:00 ~ 15:00	長野県	Nagano (Nagano)	0.054
21	3/22 14:00 ~ 15:00	岐阜県	Gifu (Kakamigahara	0.06
22	3/22 14:00 ~ 15:00	静岡県	Shizuoka (Shizuoka	0.05
23	3/22 14:00 ~ 15:00	愛知県	Aichi (Nagoya)	0.039
24	3/22 14:00 ~ 15:00	三重県	Mie (Yokkaichi)	0.046
25	3/22 14:00 ~ 15:00	滋賀県	Shiga (Ohtsu)	0.033
26	3/22 14:00 ~ 15:00	京都府	Kyoto (Kyoto)	0.038
27	3/22 14:00 ~ 15:00	大阪府	Osaka (Osaka)	0.042
28	3/22 14:00 ~ 15:00	兵庫県	Hyogo (Kobe)	0.037
29	3/22 14:00 ~ 15:00	奈良県	Nara (Nara)	0.047
30	3/22 14:00 ~ 15:00	和歌山県	Wakayama (Wakaya	0.032
31	3/22 14:00 ~ 15:00	鳥取県	Tottori (Touhaku-g	0.064
32	3/22 14:00 ~ 15:00	島根県	Shimane (Matsue)	0.037
33	3/22 14:00 ~ 15:00	岡山県	Okayama (Okayama	0.048
34	3/22 14:00 ~ 15:00	広島県	Hiroshima (Hiroshin	0.047
35	3/22 14:00 ~ 15:00	山口県	Yamaguchi (Yamagı	0.09
36	3/22 14:00 ~ 15:00	徳島県	Tokushima (Tokush	0.038
37	3/22 14:00 ~ 15:00	香川県	Kagawa (Takamatsı	0.053
38	3/22 14:00 ~ 15:00	愛媛県	Ehime (Matsuyama)	0.048
39	3/22 14:00 ~ 15:00	高知県	Kochi (Kochi)	0.025
40	3/22 14:00 ~ 15:00	福岡県	Fukuoka (Dazaifu)	0.036
41	3/22 14:00 ~ 15:00	佐賀県	Saga (Saga)	0.04
42	3/22 14:00 ~ 15:00	長崎県	Nagasaki (Ohmura)	0.03
43	3/22 14:00 ~ 15:00	熊本県	Kumamoto (Uto)	0.027
44	3/22 14:00 ~ 15:00	大分県	Oita (Oita)	0.05

45	3/22 14:00 ~ 15:00	宮崎県	Miyazaki (Miyazaki)	0.026
46	3/22 14:00 ~ 15:00	鹿児島県	Kagoshima (Kagosh	0.035
47	3/22 14:00 ~ 15:00	沖縄県	Okinawa (Uruma)	0.021
1	3/22 15:00 ~ 16:00	北海道	Hokkaido (Sapporo)	0.028
2	3/22 15:00 ~ 16:00	青森県	Aomori (Aomori)	0.022
3	3/22 15:00 ~ 16:00	岩手県	Iwate (Morioka)	0.033
4	3/22 15:00 ~ 16:00	宮城県	Miyagi (Sendai)	
5	3/22 15:00 ~ 16:00	秋田県	Akita (Akita)	0.035
6	3/22 15:00 ~ 16:00	山形県	Yamagata (Yamaga	0.096
7	3/22 15:00 ~ 16:00	福島県	Fukushima (Futaba-gun)	
8	3/22 15:00 ~ 16:00	茨城県	Ibaraki (Mito)	0.366
9	3/22 15:00 ~ 16:00	栃木県	Tochigi (Itsunomiya	0.15
10	3/22 15:00 ~ 16:00	群馬県	Gunma (Maebashi)	0.11
11	3/22 15:00 ~ 16:00	埼玉県	Saitama (Saitama)	0.114
12	3/22 15:00 ~ 16:00	千葉県	Chiba (Ichihara)	0.104
13	3/22 15:00 ~ 16:00	東京都	Tokyo (Shinjuku-ku	0.139
14	3/22 15:00 ~ 16:00	神奈川県	Kanagawa (Chigasa	0.096
15	3/22 15:00 ~ 16:00	新潟県	Niigata (Niigata)	0.047
16	3/22 15:00 ~ 16:00	富山県	Toyama (Imizu)	0.049
17	3/22 15:00 ~ 16:00	石川県	Ishikawa (Kanazawa	0.047
18	3/22 15:00 ~ 16:00	福井県	Fukui (Fukui)	0.046
19	3/22 15:00 ~ 16:00	山梨県	Yamanashi (Kofu)	0.047
20	3/22 15:00 ~ 16:00	長野県	Nagano (Nagano)	0.054
21	3/22 15:00 ~ 16:00	岐阜県	Gifu (Kakamigahara	0.06
22	3/22 15:00 ~ 16:00	静岡県	Shizuoka (Shizuoka	0.049
23	3/22 15:00 ~ 16:00	愛知県	Aichi (Nagoya)	0.039
24	3/22 15:00 ~ 16:00	三重県	Mie (Yokkaichi)	0.046
25	3/22 15:00 ~ 16:00	滋賀県	Shiga (Ohtsu)	0.033
26	3/22 15:00 ~ 16:00	京都府	Kyoto (Kyoto)	0.038
27	3/22 15:00 ~ 16:00	大阪府	Osaka (Osaka)	0.042
28	3/22 15:00 ~ 16:00	兵庫県	Hyogo (Kobe)	0.037
29	3/22 15:00 ~ 16:00	奈良県	Nara (Nara)	0.047
30	3/22 15:00 ~ 16:00	和歌山県	Wakayama (Wakaya	0.032
31	3/22 15:00 ~ 16:00	鳥取県	Tottori (Touhaku-g	0.064
32	3/22 15:00 ~ 16:00	島根県	Shimane (Matsue)	0.041
33	3/22 15:00 ~ 16:00	岡山県	Okayama (Okayama	0.048
34	3/22 15:00 ~ 16:00	広島県	Hiroshima (Hiroshin	0.046
35	3/22 15:00 ~ 16:00	山口県	Yamaguchi (Yamagu	0.091
36	3/22 15:00 ~ 16:00	徳島県	Tokushima (Tokush	0.038
37	3/22 15:00 ~ 16:00	香川県	Kagawa (Takamatsu	0.052
38	3/22 15:00 ~ 16:00	愛媛県	Ehime (Matsuyama)	0.048
39	3/22 15:00 ~ 16:00	高知県	Kochi (Kochi)	0.025
40	3/22 15:00 ~ 16:00	福岡県	Fukuoka (Dazaifu)	0.036
41	3/22 15:00 ~ 16:00	佐賀県	Saga (Saga)	0.04
42	3/22 15:00 ~ 16:00	長崎県	Nagasaki (Ohmura)	0.03
43	3/22 15:00 ~ 16:00	熊本県	Kumamoto (Uto)	0.027
44	3/22 15:00 ~ 16:00	大分県	Oita (Oita)	0.05
45	3/22 15:00 ~ 16:00	宮崎県	Miyazaki (Miyazaki)	0.027
46	3/22 15:00 ~ 16:00	鹿児島県	Kagoshima (Kagosh	0.035
47	3/22 15:00 ~ 16:00	沖縄県	Okinawa (Uruma)	0.021
1	3/22 16:00 ~ 17:00	北海道	Hokkaido (Sapporo)	0.028
2	3/22 16:00 ~ 17:00	青森県	Aomori (Aomori)	0.022
3	3/22 16:00 ~ 17:00	岩手県	Iwate (Morioka)	0.033
4	3/22 16:00 ~ 17:00	宮城県	Miyagi (Sendai)	
5	3/22 16:00 ~ 17:00	秋田県	Akita (Akita)	0.035
6	3/22 16:00 ~ 17:00	山形県	Yamagata (Yamaga	0.095
7	3/22 16:00 ~ 17:00	福島県	Fukushima (Futaba-gun)	

8	3/22 16:00 ~ 17:00	茨城県	Ibaraki (Mito)	0.378
9	3/22 16:00 ~ 17:00	栃木県	Tochigi (Itsunomiya	0.148
10	3/22 16:00 ~ 17:00	群馬県	Gunma (Maebashi)	0.11
11	3/22 16:00 ~ 17:00	埼玉県	Saitama (Saitama)	0.114
12	3/22 16:00 ~ 17:00	千葉県	Chiba (Ichihara)	0.106
13	3/22 16:00 ~ 17:00	東京都	Tokyo (Shinjuku-ku	0.138
14	3/22 16:00 ~ 17:00	神奈川県	Kanagawa (Chigasa	0.093
15	3/22 16:00 ~ 17:00	新潟県	Niigata (Niigata)	0.046
16	3/22 16:00 ~ 17:00	富山県	Toyama (Imizu)	0.05
17	3/22 16:00 ~ 17:00	石川県	Ishikawa (Kanazawa	0.048
18	3/22 16:00 ~ 17:00	福井県	Fukui (Fukui)	0.046
19	3/22 16:00 ~ 17:00	山梨県	Yamanashi (Kofu)	0.047
20	3/22 16:00 ~ 17:00	長野県	Nagano (Nagano)	0.055
21	3/22 16:00 ~ 17:00	岐阜県	Gifu (Kakamigahara	0.06
22	3/22 16:00 ~ 17:00	静岡県	Shizuoka (Shizuoka	0.048
23	3/22 16:00 ~ 17:00	愛知県	Aichi (Nagoya)	0.039
24	3/22 16:00 ~ 17:00	三重県	Mie (Yokkaichi)	0.046
25	3/22 16:00 ~ 17:00	滋賀県	Shiga (Ohtsu)	0.033
26	3/22 16:00 ~ 17:00	京都府	Kyoto (Kyoto)	0.038
27	3/22 16:00 ~ 17:00	大阪府	Osaka (Osaka)	0.043
28	3/22 16:00 ~ 17:00	兵庫県	Hyogo (Kobe)	0.037
29	3/22 16:00 ~ 17:00	奈良県	Nara (Nara)	0.048
30	3/22 16:00 ~ 17:00	和歌山県	Wakayama (Wakaya	0.032
31	3/22 16:00 ~ 17:00	鳥取県	Tottori (Touhaku-g	0.065
32	3/22 16:00 ~ 17:00	島根県	Shimane (Matsue)	0.04
33	3/22 16:00 ~ 17:00	岡山県	Okayama (Okayama	0.048
34	3/22 16:00 ~ 17:00	広島県	Hiroshima (Hiroshin	0.046
35	3/22 16:00 ~ 17:00	山口県	Yamaguchi (Yamagı	0.092
36	3/22 16:00 ~ 17:00	徳島県	Tokushima (Tokush	0.038
37	3/22 16:00 ~ 17:00	香川県	Kagawa (Takamatsı	0.052
38	3/22 16:00 ~ 17:00	愛媛県	Ehime (Matsuyama	0.048
39	3/22 16:00 ~ 17:00	高知県	Kochi (Kochi)	0.025
40	3/22 16:00 ~ 17:00	福岡県	Fukuoka (Dazaifu)	0.036
41	3/22 16:00 ~ 17:00	佐賀県	Saga (Saga)	0.04
42	3/22 16:00 ~ 17:00	長崎県	Nagasaki (Ohmura)	0.029
43	3/22 16:00 ~ 17:00	熊本県	Kumamoto (Uto)	0.027
44	3/22 16:00 ~ 17:00	大分県	Oita (Oita)	0.05
45	3/22 16:00 ~ 17:00	宮崎県	Miyazaki (Miyazaki)	0.027
46	3/22 16:00 ~ 17:00	鹿児島県	Kagoshima (Kagosh	0.034
47	3/22 16:00 ~ 17:00	沖縄県	Okinawa (Uruma)	0.021
1	3/23 17:00 ~ 18:00	北海道	Hokkaido (Sapporo	0.028
2	3/22 17:00 ~ 18:00	青森県	Aomori (Aomori)	0.023
3	3/22 17:00 ~ 18:00	岩手県	Iwate (Morioka)	0.033
4	3/22 17:00 ~ 18:00	宮城県	Miyagi (Sendai)	
5	3/22 17:00 ~ 18:00	秋田県	Akita (Akita)	0.035
6	3/22 17:00 ~ 18:00	山形県	Yamagata (Yamaga	0.095
7	3/22 17:00 ~ 18:00	福島県	Fukushima (Futaba-gun)	
8	3/22 17:00 ~ 18:00	茨城県	Ibaraki (Mito)	0.363
9	3/22 17:00 ~ 18:00	栃木県	Tochigi (Itsunomiya	0.145
10	3/22 17:00 ~ 18:00	群馬県	Gunma (Maebashi)	0.111
11	3/22 17:00 ~ 18:00	埼玉県	Saitama (Saitama)	0.114
12	3/22 17:00 ~ 18:00	千葉県	Chiba (Ichihara)	0.104
13	3/22 17:00 ~ 18:00	東京都	Tokyo (Shinjuku-ku	0.138
14	3/22 17:00 ~ 18:00	神奈川県	Kanagawa (Chigasa	0.094
15	3/22 17:00 ~ 18:00	新潟県	Niigata (Niigata)	0.047
16	3/22 17:00 ~ 18:00	富山県	Toyama (Imizu)	0.053
17	3/22 17:00 ~ 18:00	石川県	Ishikawa (Kanazawa	0.049

18	3/22 17:00 ~ 18:00	福井県	Fukui (Fukui)	0.045
19	3/22 17:00 ~ 18:00	山梨県	Yamanashi (Kofu)	0.047
20	3/22 17:00 ~ 18:00	長野県	Nagano (Nagano)	0.054
21	3/22 17:00 ~ 18:00	岐阜県	Gifu (Kakamigahara	0.06
22	3/22 17:00 ~ 18:00	静岡県	Shizuoka (Shizuoka	0.049
23	3/22 17:00 ~ 18:00	愛知県	Aichi (Nagoya)	0.039
24	3/22 17:00 ~ 18:00	三重県	Mie (Yokkaichi)	0.046
25	3/22 17:00 ~ 18:00	滋賀県	Shiga (Ohtsu)	0.036
26	3/22 17:00 ~ 18:00	京都府	Kyoto (Kyoto)	0.04
27	3/22 17:00 ~ 18:00	大阪府	Osaka (Osaka)	0.043
28	3/22 17:00 ~ 18:00	兵庫県	Hyogo (Kobe)	0.037
29	3/22 17:00 ~ 18:00	奈良県	Nara (Nara)	0.048
30	3/22 17:00 ~ 18:00	和歌山県	Wakayama (Wakaya	0.032
31	3/22 17:00 ~ 18:00	鳥取県	Tottori (Touhaku-g	0.064
32	3/22 17:00 ~ 18:00	島根県	Shimane (Matsue)	0.038
33	3/22 17:00 ~ 18:00	岡山県	Okayama (Okayama	0.048
34	3/22 17:00 ~ 18:00	広島県	Hiroshima (Hiroshin	0.047
35	3/22 17:00 ~ 18:00	山口県	Yamaguchi (Yamagu	0.092
36	3/22 17:00 ~ 18:00	徳島県	Tokushima (Tokush	0.038
37	3/22 17:00 ~ 18:00	香川県	Kagawa (Takamatsu	0.052
38	3/22 17:00 ~ 18:00	愛媛県	Ehime (Matsuyama)	0.048
39	3/22 17:00 ~ 18:00	高知県	Kochi (Kochi)	0.025
40	3/22 17:00 ~ 18:00	福岡県	Fukuoka (Dazaifu)	0.036
41	3/22 17:00 ~ 18:00	佐賀県	Saga (Saga)	0.04
42	3/22 17:00 ~ 18:00	長崎県	Nagasaki (Ohmura)	0.029
43	3/22 17:00 ~ 18:00	熊本県	Kumamoto (Uto)	0.027
44	3/22 17:00 ~ 18:00	大分県	Oita (Oita)	0.05
45	3/22 17:00 ~ 18:00	宮崎県	Miyazaki (Miyazaki)	0.026
46	3/22 17:00 ~ 18:00	鹿児島県	Kagoshima (Kagosh	0.035
47	3/22 17:00 ~ 18:00	沖縄県	Okinawa (Uruma)	0.022
1	3/22 18:00 ~ 19:00	北海道	Hokkaido (Sapporo)	0.028
2	3/22 18:00 ~ 19:00	青森県	Aomori (Aomori)	0.023
3	3/22 18:00 ~ 19:00	岩手県	Iwate (Morioka)	0.033
4	3/22 18:00 ~ 19:00	宮城県	Miyagi (Sendai)	
5	3/22 18:00 ~ 19:00	秋田県	Akita (Akita)	0.035
6	3/22 18:00 ~ 19:00	山形県	Yamagata (Yamaga	0.095
7	3/22 18:00 ~ 19:00	福島県	Fukushima (Futaba-gun)	
8	3/22 18:00 ~ 19:00	茨城県	Ibaraki (Mito)	0.356
9	3/22 18:00 ~ 19:00	栃木県	Tochigi (Itsunomiya	0.144
10	3/22 18:00 ~ 19:00	群馬県	Gunma (Maebashi)	0.112
11	3/22 18:00 ~ 19:00	埼玉県	Saitama (Saitama)	
12	3/22 18:00 ~ 19:00	千葉県	Chiba (Ichihara)	0.112
13	3/22 18:00 ~ 19:00	東京都	Tokyo (Shinjuku-ku	0.14
14	3/22 18:00 ~ 19:00	神奈川県	Kanagawa (Chigasa	0.095
15	3/22 18:00 ~ 19:00	新潟県	Niigata (Niigata)	0.047
16	3/22 18:00 ~ 19:00	富山県	Toyama (Imizu)	0.052
17	3/22 18:00 ~ 19:00	石川県	Ishikawa (Kanazawa	0.053
18	3/22 18:00 ~ 19:00	福井県	Fukui (Fukui)	0.045
19	3/22 18:00 ~ 19:00	山梨県	Yamanashi (Kofu)	0.047
20	3/22 18:00 ~ 19:00	長野県	Nagano (Nagano)	0.055
21	3/22 18:00 ~ 19:00	岐阜県	Gifu (Kakamigahara	0.061
22	3/22 18:00 ~ 19:00	静岡県	Shizuoka (Shizuoka	0.049
23	3/22 18:00 ~ 19:00	愛知県	Aichi (Nagoya)	0.04
24	3/22 18:00 ~ 19:00	三重県	Mie (Yokkaichi)	0.047
25	3/22 18:00 ~ 19:00	滋賀県	Shiga (Ohtsu)	0.036
26	3/22 18:00 ~ 19:00	京都府	Kyoto (Kyoto)	0.039
27	3/22 18:00 ~ 19:00	大阪府	Osaka (Osaka)	0.042

28	3/22 18:00 ~ 19:00	兵庫県	Hyogo (Kobe)	0.036
29	3/22 18:00 ~ 19:00	奈良県	Nara (Nara)	0.048
30	3/22 18:00 ~ 19:00	和歌山県	Wakayama (Wakaya	0.031
31	3/22 18:00 ~ 19:00	鳥取県	Tottori (Touhaku-g	0.063
32	3/22 18:00 ~ 19:00	島根県	Shimane (Matsue)	0.037
33	3/22 18:00 ~ 19:00	岡山県	Okayama (Okayama	0.048
34	3/22 18:00 ~ 19:00	広島県	Hiroshima (Hiroshin	0.046
35	3/22 18:00 ~ 19:00	山口県	Yamaguchi (Yamag	0.092
36	3/22 18:00 ~ 19:00	徳島県	Tokushima (Tokush	0.038
37	3/22 18:00 ~ 19:00	香川県	Kagawa (Takamats	0.052
38	3/22 18:00 ~ 19:00	愛媛県	Ehime (Matsuyama	0.048
39	3/22 18:00 ~ 19:00	高知県	Kochi (Kochi)	0.025
40	3/22 18:00 ~ 19:00	福岡県	Fukuoka (Dazaifu)	0.036
41	3/22 18:00 ~ 19:00	佐賀県	Saga (Saga)	0.04
42	3/22 18:00 ~ 19:00	長崎県	Nagasaki (Ohmura)	0.029
43	3/22 18:00 ~ 19:00	熊本県	Kumamoto (Uto)	0.027
44	3/22 18:00 ~ 19:00	大分県	Oita (Oita)	0.05
45	3/22 18:00 ~ 19:00	宮崎県	Miyazaki (Miyazaki)	0.027
46	3/22 18:00 ~ 19:00	鹿児島県	Kagoshima (Kagosh	0.035
47	3/22 18:00 ~ 19:00	沖縄県	Okinawa (Uruma)	0.021
1	3/22 19:00 ~ 20:00	北海道	Hokkaido (Sapporo)	0.028
2	3/22 19:00 ~ 20:00	青森県	Aomori (Aomori)	0.023
3	3/22 19:00 ~ 20:00	岩手県	Iwate (Morioka)	0.033
4	3/22 19:00 ~ 20:00	宮城県	Miyagi (Sendai)	
5	3/22 19:00 ~ 20:00	秋田県	Akita (Akita)	0.035
6	3/22 19:00 ~ 20:00	山形県	Yamagata (Yamaga	0.095
7	3/22 19:00 ~ 20:00	福島県	Fukushima (Futaba-gun)	
8	3/22 19:00 ~ 20:00	茨城県	Ibaraki (Mito)	0.378
9	3/22 19:00 ~ 20:00	栃木県	Tochigi (Itsunomiya	0.147
10	3/22 19:00 ~ 20:00	群馬県	Gunma (Maebashi)	0.112
11	3/22 19:00 ~ 20:00	埼玉県	Saitama (Saitama)	
12	3/22 19:00 ~ 20:00	千葉県	Chiba (Ichihara)	0.125
13	3/22 19:00 ~ 20:00	東京都	Tokyo (Shinjuku-ku	0.141
14	3/22 19:00 ~ 20:00	神奈川県	Kanagawa (Chigasa	0.095
15	3/22 19:00 ~ 20:00	新潟県	Niigata (Niigata)	0.047
16	3/22 19:00 ~ 20:00	富山県	Toyama (Imizu)	0.056
17	3/22 19:00 ~ 20:00	石川県	Ishikawa (Kanazawa	0.051
18	3/22 19:00 ~ 20:00	福井県	Fukui (Fukui)	0.046
19	3/22 19:00 ~ 20:00	山梨県	Yamanashi (Kofu)	0.047
20	3/22 19:00 ~ 20:00	長野県	Nagano (Nagano)	0.06
21	3/22 19:00 ~ 20:00	岐阜県	Gifu (Kakamigahara	0.06
22	3/22 19:00 ~ 20:00	静岡県	Shizuoka (Shizuoka	0.05
23	3/22 19:00 ~ 20:00	愛知県	Aichi (Nagoya)	0.04
24	3/22 19:00 ~ 20:00	三重県	Mie (Yokkaichi)	0.047
25	3/22 19:00 ~ 20:00	滋賀県	Shiga (Ohtsu)	0.033
26	3/22 19:00 ~ 20:00	京都府	Kyoto (Kyoto)	0.038
27	3/22 19:00 ~ 20:00	大阪府	Osaka (Osaka)	0.042
28	3/22 19:00 ~ 20:00	兵庫県	Hyogo (Kobe)	0.036
29	3/22 19:00 ~ 20:00	奈良県	Nara (Nara)	0.048
30	3/22 19:00 ~ 20:00	和歌山県	Wakayama (Wakaya	0.031
31	3/22 19:00 ~ 20:00	鳥取県	Tottori (Touhaku-g	0.065
32	3/22 19:00 ~ 20:00	島根県	Shimane (Matsue)	0.037
33	3/22 19:00 ~ 20:00	岡山県	Okayama (Okayama	0.048
34	3/22 19:00 ~ 20:00	広島県	Hiroshima (Hiroshin	0.046
35	3/22 19:00 ~ 20:00	山口県	Yamaguchi (Yamag	0.091
36	3/22 19:00 ~ 20:00	徳島県	Tokushima (Tokush	0.038
37	3/22 19:00 ~ 20:00	香川県	Kagawa (Takamats	0.052

38	3/22 19:00 ~ 20:00	愛媛県	Ehime (Matsuyama)	0.048
39	3/22 19:00 ~ 20:00	高知県	Kochi (Kochi)	0.025
40	3/22 19:00 ~ 20:00	福岡県	Fukuoka (Dazaifu)	0.036
41	3/22 19:00 ~ 20:00	佐賀県	Saga (Saga)	0.04
42	3/22 19:00 ~ 20:00	長崎県	Nagasaki (Ohmura)	0.029
43	3/22 19:00 ~ 20:00	熊本県	Kumamoto (Uto)	0.027
44	3/22 19:00 ~ 20:00	大分県	Oita (Oita)	0.049
45	3/22 19:00 ~ 20:00	宮崎県	Miyazaki (Miyazaki)	0.027
46	3/22 19:00 ~ 20:00	鹿児島県	Kagoshima (Kagosh	0.035
47	3/22 19:00 ~ 20:00	沖縄県	Okinawa (Uruma)	0.022
1	3/22 20:00 ~ 21:00	北海道	Hokkaido (Sapporo)	0.028
2	3/22 20:00 ~ 21:00	青森県	Aomori (Aomori)	0.023
3	3/22 20:00 ~ 21:00	岩手県	Iwate (Morioka)	0.033
4	3/22 20:00 ~ 21:00	宮城県	Miyagi (Sendai)	
5	3/22 20:00 ~ 21:00	秋田県	Akita (Akita)	0.035
6	3/22 20:00 ~ 21:00	山形県	Yamagata (Yamaga	0.095
7	3/22 20:00 ~ 21:00	福島県	Fukushima (Futaba-gun)	
8	3/22 20:00 ~ 21:00	茨城県	Ibaraki (Mito)	0.389
9	3/22 20:00 ~ 21:00	栃木県	Tochigi (Itsunomiya	0.156
10	3/22 20:00 ~ 21:00	群馬県	Gunma (Maebashi)	0.113
11	3/22 20:00 ~ 21:00	埼玉県	Saitama (Saitama)	0.127
12	3/22 20:00 ~ 21:00	千葉県	Chiba (Ichihara)	0.125
13	3/22 20:00 ~ 21:00	東京都	Tokyo (Shinjuku-ku	0.155
14	3/22 20:00 ~ 21:00	神奈川県	Kanagawa (Chigasa	0.096
15	3/22 20:00 ~ 21:00	新潟県	Niigata (Niigata)	0.047
16	3/22 20:00 ~ 21:00	富山県	Toyama (Imizu)	0.057
17	3/22 20:00 ~ 21:00	石川県	Ishikawa (Kanazawa	0.051
18	3/22 20:00 ~ 21:00	福井県	Fukui (Fukui)	0.046
19	3/22 20:00 ~ 21:00	山梨県	Yamanashi (Kofu)	0.047
20	3/22 20:00 ~ 21:00	長野県	Nagano (Nagano)	0.059
21	3/22 20:00 ~ 21:00	岐阜県	Gifu (Kakamigahara	0.06
22	3/22 20:00 ~ 21:00	静岡県	Shizuoka (Shizuoka	0.05
23	3/22 20:00 ~ 21:00	愛知県	Aichi (Nagoya)	0.04
24	3/22 20:00 ~ 21:00	三重県	Mie (Yokkaichi)	0.047
25	3/22 20:00 ~ 21:00	滋賀県	Shiga (Ohtsu)	0.033
26	3/22 20:00 ~ 21:00	京都府	Kyoto (Kyoto)	0.038
27	3/22 20:00 ~ 21:00	大阪府	Osaka (Osaka)	0.042
28	3/22 20:00 ~ 21:00	兵庫県	Hyogo (Kobe)	0.036
29	3/22 20:00 ~ 21:00	奈良県	Nara (Nara)	0.047
30	3/22 20:00 ~ 21:00	和歌山県	Wakayama (Wakaya	0.031
31	3/22 20:00 ~ 21:00	鳥取県	Tottori (Touhaku-g	0.064
32	3/22 20:00 ~ 21:00	島根県	Shimane (Matsue)	0.036
33	3/22 20:00 ~ 21:00	岡山県	Okayama (Okayama	0.048
34	3/22 20:00 ~ 21:00	広島県	Hiroshima (Hiroshin	0.047
35	3/22 20:00 ~ 21:00	山口県	Yamaguchi (Yamagu	0.091
36	3/22 20:00 ~ 21:00	徳島県	Tokushima (Tokush	0.037
37	3/22 20:00 ~ 21:00	香川県	Kagawa (Takamatsu	0.052
38	3/22 20:00 ~ 21:00	愛媛県	Ehime (Matsuyama)	0.048
39	3/22 20:00 ~ 21:00	高知県	Kochi (Kochi)	0.025
40	3/22 20:00 ~ 21:00	福岡県	Fukuoka (Dazaifu)	0.036
41	3/22 20:00 ~ 21:00	佐賀県	Saga (Saga)	0.04
42	3/22 20:00 ~ 21:00	長崎県	Nagasaki (Ohmura)	0.029
43	3/22 20:00 ~ 21:00	熊本県	Kumamoto (Uto)	0.027
44	3/22 20:00 ~ 21:00	大分県	Oita (Oita)	0.049
45	3/22 20:00 ~ 21:00	宮崎県	Miyazaki (Miyazaki)	0.027
46	3/22 20:00 ~ 21:00	鹿児島県	Kagoshima (Kagosh	0.035
47	3/22 20:00 ~ 21:00	沖縄県	Okinawa (Uruma)	0.021

1	3/22 21:00 ~ 22:00	北海道	Hokkaido (Sapporo)	0.028
2	3/22 21:00 ~ 22:00	青森県	Aomori (Aomori)	0.023
3	3/22 21:00 ~ 22:00	岩手県	Iwate (Morioka)	0.033
4	3/22 21:00 ~ 22:00	宮城県	Miyagi (Sendai)	
5	3/22 21:00 ~ 22:00	秋田県	Akita (Akita)	0.035
6	3/22 21:00 ~ 22:00	山形県	Yamagata (Yamaga	0.093
7	3/22 21:00 ~ 22:00	福島県	Fukushima (Futaba-gun)	
8	3/22 21:00 ~ 22:00	茨城県	Ibaraki (Mito)	0.361
9	3/22 21:00 ~ 22:00	栃木県	Tochigi (Itsunomiya	0.158
10	3/22 21:00 ~ 22:00	群馬県	Gunma (Maebashi)	0.113
11	3/22 21:00 ~ 22:00	埼玉県	Saitama (Saitama)	0.127
12	3/22 21:00 ~ 22:00	千葉県	Chiba (Ichihara)	0.122
13	3/22 21:00 ~ 22:00	東京都	Tokyo (Shinjuku-ku	0.151
14	3/22 21:00 ~ 22:00	神奈川県	Kanagawa (Chigasa	0.096
15	3/22 21:00 ~ 22:00	新潟県	Niigata (Niigata)	0.047
16	3/22 21:00 ~ 22:00	富山県	Toyama (Imizu)	0.061
17	3/22 21:00 ~ 22:00	石川県	Ishikawa (Kanazawa	0.051
18	3/22 21:00 ~ 22:00	福井県	Fukui (Fukui)	0.049
19	3/22 21:00 ~ 22:00	山梨県	Yamanashi (Kofu)	0.047
20	3/22 21:00 ~ 22:00	長野県	Nagano (Nagano)	0.056
21	3/22 21:00 ~ 22:00	岐阜県	Gifu (Kakamigahara	0.06
22	3/22 21:00 ~ 22:00	静岡県	Shizuoka (Shizuoka	0.05
23	3/22 21:00 ~ 22:00	愛知県	Aichi (Nagoya)	0.039
24	3/22 21:00 ~ 22:00	三重県	Mie (Yokkaichi)	0.046
25	3/22 21:00 ~ 22:00	滋賀県	Shiga (Ohtsu)	0.032
26	3/22 21:00 ~ 22:00	京都府	Kyoto (Kyoto)	0.037
27	3/22 21:00 ~ 22:00	大阪府	Osaka (Osaka)	0.042
28	3/22 21:00 ~ 22:00	兵庫県	Hyogo (Kobe)	0.036
29	3/22 21:00 ~ 22:00	奈良県	Nara (Nara)	0.048
30	3/22 21:00 ~ 22:00	和歌山県	Wakayama (Wakaya	0.031
31	3/22 21:00 ~ 22:00	鳥取県	Tottori (Touhaku-g	0.063
32	3/22 21:00 ~ 22:00	島根県	Shimane (Matsue)	0.036
33	3/22 21:00 ~ 22:00	岡山県	Okayama (Okayama	0.048
34	3/22 21:00 ~ 22:00	広島県	Hiroshima (Hiroshin	0.047
35	3/22 21:00 ~ 22:00	山口県	Yamaguchi (Yamagu	0.09
36	3/22 21:00 ~ 22:00	徳島県	Tokushima (Tokush	0.038
37	3/22 21:00 ~ 22:00	香川県	Kagawa (Takamatsu	0.052
38	3/22 21:00 ~ 22:00	愛媛県	Ehime (Matsuyama)	0.048
39	3/22 21:00 ~ 22:00	高知県	Kochi (Kochi)	0.025
40	3/22 21:00 ~ 22:00	福岡県	Fukuoka (Dazaifu)	0.036
41	3/22 21:00 ~ 22:00	佐賀県	Saga (Saga)	0.04
42	3/22 21:00 ~ 22:00	長崎県	Nagasaki (Ohmura)	0.029
43	3/22 21:00 ~ 22:00	熊本県	Kumamoto (Uto)	0.027
44	3/22 21:00 ~ 22:00	大分県	Oita (Oita)	0.05
45	3/22 21:00 ~ 22:00	宮崎県	Miyazaki (Miyazaki)	0.027
46	3/22 21:00 ~ 22:00	鹿児島県	Kagoshima (Kagosh	0.035
47	3/22 21:00 ~ 22:00	沖縄県	Okinawa (Uruma)	0.022
1	3/22 22:00 ~ 23:00	北海道	Hokkaido (Sapporo)	0.029
2	3/22 22:00 ~ 23:00	青森県	Aomori (Aomori)	0.023
3	3/22 22:00 ~ 23:00	岩手県	Iwate (Morioka)	0.033
4	3/22 22:00 ~ 23:00	宮城県	Miyagi (Sendai)	
5	3/22 22:00 ~ 23:00	秋田県	Akita (Akita)	0.035
6	3/22 22:00 ~ 23:00	山形県	Yamagata (Yamaga	0.091
7	3/22 22:00 ~ 23:00	福島県	Fukushima (Futaba-gun)	
8	3/22 22:00 ~ 23:00	茨城県	Ibaraki (Mito)	0.345
9	3/22 22:00 ~ 23:00	栃木県	Tochigi (Itsunomiya	0.154
10	3/22 22:00 ~ 23:00	群馬県	Gunma (Maebashi)	0.113

11	3/22 22:00 ~ 23:00	埼玉県	Saitama (Saitama)	0.126
12	3/22 22:00 ~ 23:00	千葉県	Chiba (Ichihara)	0.112
13	3/22 22:00 ~ 23:00	東京都	Tokyo (Shinjuku-ku	0.151
14	3/22 22:00 ~ 23:00	神奈川県	Kanagawa (Chigasa	0.098
15	3/22 22:00 ~ 23:00	新潟県	Niigata (Niigata)	0.048
16	3/22 22:00 ~ 23:00	富山県	Toyama (Imizu)	0.057
17	3/22 22:00 ~ 23:00	石川県	Ishikawa (Kanazawa	0.053
18	3/22 22:00 ~ 23:00	福井県	Fukui (Fukui)	0.05
19	3/22 22:00 ~ 23:00	山梨県	Yamanashi (Kofu)	0.047
20	3/22 22:00 ~ 23:00	長野県	Nagano (Nagano)	0.055
21	3/22 22:00 ~ 23:00	岐阜県	Gifu (Kakamigahara	0.06
22	3/22 22:00 ~ 23:00	静岡県	Shizuoka (Shizuoka	0.05
23	3/22 22:00 ~ 23:00	愛知県	Aichi (Nagoya)	0.039
24	3/22 22:00 ~ 23:00	三重県	Mie (Yokkaichi)	0.046
25	3/22 22:00 ~ 23:00	滋賀県	Shiga (Ohtsu)	0.033
26	3/22 22:00 ~ 23:00	京都府	Kyoto (Kyoto)	0.037
27	3/22 22:00 ~ 23:00	大阪府	Osaka (Osaka)	0.042
28	3/22 22:00 ~ 23:00	兵庫県	Hyogo (Kobe)	0.036
29	3/22 22:00 ~ 23:00	奈良県	Nara (Nara)	0.048
30	3/22 22:00 ~ 23:00	和歌山県	Wakayama (Wakaya	0.031
31	3/22 22:00 ~ 23:00	鳥取県	Tottori (Touhaku-g	0.063
32	3/22 22:00 ~ 23:00	島根県	Shimane (Matsue)	0.036
33	3/22 22:00 ~ 23:00	岡山県	Okayama (Okayama	0.048
34	3/22 22:00 ~ 23:00	広島県	Hiroshima (Hiroshin	0.047
35	3/22 22:00 ~ 23:00	山口県	Yamaguchi (Yamagu	0.09
36	3/22 22:00 ~ 23:00	徳島県	Tokushima (Tokush	0.037
37	3/22 22:00 ~ 23:00	香川県	Kagawa (Takamatsu	0.052
38	3/22 22:00 ~ 23:00	愛媛県	Ehime (Matsuyama)	0.048
39	3/22 22:00 ~ 23:00	高知県	Kochi (Kochi)	0.025
40	3/22 22:00 ~ 23:00	福岡県	Fukuoka (Dazaifu)	0.036
41	3/22 22:00 ~ 23:00	佐賀県	Saga (Saga)	0.04
42	3/22 22:00 ~ 23:00	長崎県	Nagasaki (Ohmura)	0.029
43	3/22 22:00 ~ 23:00	熊本県	Kumamoto (Uto)	0.027
44	3/22 22:00 ~ 23:00	大分県	Oita (Oita)	0.05
45	3/22 22:00 ~ 23:00	宮崎県	Miyazaki (Miyazaki)	0.027
46	3/22 22:00 ~ 23:00	鹿児島県	Kagoshima (Kagosh	0.035
47	3/22 22:00 ~ 23:00	沖縄県	Okinawa (Uruma)	0.021
1	3/22 23:00 ~ 24:00	北海道	Hokkaido (Sapporo)	0.029
2	3/22 23:00 ~ 24:00	青森県	Aomori (Aomori)	0.023
3	3/22 23:00 ~ 24:00	岩手県	Iwate (Morioka)	0.034
4	3/22 23:00 ~ 24:00	宮城県	Miyagi (Sendai)	
5	3/22 23:00 ~ 24:00	秋田県	Akita (Akita)	0.035
6	3/22 23:00 ~ 24:00	山形県	Yamagata (Yamaga	0.089
7	3/22 23:00 ~ 24:00	福島県	Fukushima (Futaba-gun)	
8	3/22 23:00 ~ 24:00	茨城県	Ibaraki (Mito)	0.339
9	3/22 23:00 ~ 24:00	栃木県	Tochigi (Itsunomiya	0.151
10	3/22 23:00 ~ 24:00	群馬県	Gunma (Maebashi)	0.112
11	3/22 23:00 ~ 24:00	埼玉県	Saitama (Saitama)	0.126
12	3/22 23:00 ~ 24:00	千葉県	Chiba (Ichihara)	0.107
13	3/22 23:00 ~ 24:00	東京都	Tokyo (Shinjuku-ku	0.154
14	3/22 23:00 ~ 24:00	神奈川県	Kanagawa (Chigasa	0.098
15	3/22 23:00 ~ 24:00	新潟県	Niigata (Niigata)	0.049
16	3/22 23:00 ~ 24:00	富山県	Toyama (Imizu)	0.053
17	3/22 23:00 ~ 24:00	石川県	Ishikawa (Kanazawa	0.056
18	3/22 23:00 ~ 24:00	福井県	Fukui (Fukui)	0.049
19	3/22 23:00 ~ 24:00	山梨県	Yamanashi (Kofu)	0.047
20	3/22 23:00 ~ 24:00	長野県	Nagano (Nagano)	0.054

21	3/22 23:00 ~ 24:00	岐阜県	Gifu (Kakamigahara	0.06
22	3/22 23:00 ~ 24:00	静岡県	Shizuoka (Shizuoka	0.05
23	3/22 23:00 ~ 24:00	愛知県	Aichi (Nagoya)	0.039
24	3/22 23:00 ~ 24:00	三重県	Mie (Yokkaichi)	0.046
25	3/22 23:00 ~ 24:00	滋賀県	Shiga (Ohtsu)	0.033
26	3/22 23:00 ~ 24:00	京都府	Kyoto (Kyoto)	0.038
27	3/22 23:00 ~ 24:00	大阪府	Osaka (Osaka)	0.042
28	3/22 23:00 ~ 24:00	兵庫県	Hyogo (Kobe)	0.037
29	3/22 23:00 ~ 24:00	奈良県	Nara (Nara)	0.048
30	3/22 23:00 ~ 24:00	和歌山県	Wakayama (Wakaya	0.031
31	3/22 23:00 ~ 24:00	鳥取県	Tottori (Touhaku-g	0.063
32	3/22 23:00 ~ 24:00	島根県	Shimane (Matsue)	0.036
33	3/22 23:00 ~ 24:00	岡山県	Okayama (Okayama	0.048
34	3/22 23:00 ~ 24:00	広島県	Hiroshima (Hiroshin	0.047
35	3/22 23:00 ~ 24:00	山口県	Yamaguchi (Yamagı	0.091
36	3/22 23:00 ~ 24:00	徳島県	Tokushima (Tokush	0.038
37	3/22 23:00 ~ 24:00	香川県	Kagawa (Takamatsı	0.052
38	3/22 23:00 ~ 24:00	愛媛県	Ehime (Matsuyama	0.048
39	3/22 23:00 ~ 24:00	高知県	Kochi (Kochi)	0.025
40	3/22 23:00 ~ 24:00	福岡県	Fukuoka (Dazaifu)	0.036
41	3/22 23:00 ~ 24:00	佐賀県	Saga (Saga)	0.04
42	3/22 23:00 ~ 24:00	長崎県	Nagasaki (Ohmura)	0.029
43	3/22 23:00 ~ 24:00	熊本県	Kumamoto (Uto)	0.027
44	3/22 23:00 ~ 24:00	大分県	Oita (Oita)	0.05
45	3/22 23:00 ~ 24:00	宮崎県	Miyazaki (Miyazaki)	0.027
46	3/22 23:00 ~ 24:00	鹿児島県	Kagoshima (Kagosh	0.035
47	3/22 23:00 ~ 24:00	沖縄県	Okinawa (Uruma)	0.021
1	3/23 00:00 ~ 01:00	北海道	Hokkaido (Sapporo	0.029
2	3/23 00:00 ~ 01:00	青森県	Aomori (Aomori)	0.023
3	3/23 00:00 ~ 01:00	岩手県	Iwate (Morioka)	0.033
4	3/23 00:00 ~ 01:00	宮城県	Miyagi (Sendai)	
5	3/23 00:00 ~ 01:00	秋田県	Akita (Akita)	0.035
6	3/23 00:00 ~ 01:00	山形県	Yamagata (Yamaga	0.087
7	3/23 00:00 ~ 01:00	福島県	Fukushima (Futaba-gun)	
8	3/23 00:00 ~ 01:00	茨城県	Ibaraki (Mito)	0.334
9	3/23 00:00 ~ 01:00	栃木県	Tochigi (Itsunomiya	0.15
10	3/23 00:00 ~ 01:00	群馬県	Gunma (Maebashi)	0.109
11	3/23 00:00 ~ 01:00	埼玉県	Saitama (Saitama)	0.133
12	3/23 00:00 ~ 01:00	千葉県	Chiba (Ichihara)	0.105
13	3/23 00:00 ~ 01:00	東京都	Tokyo (Shinjuku-ku	0.154
14	3/23 00:00 ~ 01:00	神奈川県	Kanagawa (Chigasa	0.101
15	3/23 00:00 ~ 01:00	新潟県	Niigata (Niigata)	0.049
16	3/23 00:00 ~ 01:00	富山県	Toyama (Imizu)	0.05
17	3/23 00:00 ~ 01:00	石川県	Ishikawa (Kanazawa	0.054
18	3/23 00:00 ~ 01:00	福井県	Fukui (Fukui)	0.048
19	3/23 00:00 ~ 01:00	山梨県	Yamanashi (Kofu)	0.048
20	3/23 00:00 ~ 01:00	長野県	Nagano (Nagano)	0.054
21	3/23 00:00 ~ 01:00	岐阜県	Gifu (Kakamigahara	0.06
22	3/23 00:00 ~ 01:00	静岡県	Shizuoka (Shizuoka	0.05
23	3/23 00:00 ~ 01:00	愛知県	Aichi (Nagoya)	0.039
24	3/23 00:00 ~ 01:00	三重県	Mie (Yokkaichi)	0.046
25	3/23 00:00 ~ 01:00	滋賀県	Shiga (Ohtsu)	0.033
26	3/23 00:00 ~ 01:00	京都府	Kyoto (Kyoto)	0.038
27	3/23 00:00 ~ 01:00	大阪府	Osaka (Osaka)	0.043
28	3/23 00:00 ~ 01:00	兵庫県	Hyogo (Kobe)	0.037
29	3/23 00:00 ~ 01:00	奈良県	Nara (Nara)	0.048
30	3/23 00:00 ~ 01:00	和歌山県	Wakayama (Wakaya	0.031

31	3/23 00:00 ~ 01:00	鳥取県	Tottori (Touhaku-g	0.063
32	3/23 00:00 ~ 01:00	島根県	Shimane (Matsue)	0.036
33	3/23 00:00 ~ 01:00	岡山県	Okayama (Okayama	0.048
34	3/23 00:00 ~ 01:00	広島県	Hiroshima (Hiroshin	0.047
35	3/23 00:00 ~ 01:00	山口県	Yamaguchi (Yamagı	0.091
36	3/23 00:00 ~ 01:00	徳島県	Tokushima (Tokush	0.038
37	3/23 00:00 ~ 01:00	香川県	Kagawa (Takamatsı	0.052
38	3/23 00:00 ~ 01:00	愛媛県	Ehime (Matsuyama	0.048
39	3/23 00:00 ~ 01:00	高知県	Kochi (Kochi)	0.025
40	3/23 00:00 ~ 01:00	福岡県	Fukuoka (Dazaifu)	0.036
41	3/23 00:00 ~ 01:00	佐賀県	Saga (Saga)	0.04
42	3/23 00:00 ~ 01:00	長崎県	Nagasaki (Ohmura)	0.029
43	3/23 00:00 ~ 01:00	熊本県	Kumamoto (Uto)	0.027
44	3/23 00:00 ~ 01:00	大分県	Oita (Oita)	0.05
45	3/23 00:00 ~ 01:00	宮崎県	Miyazaki (Miyazaki)	0.027
46	3/23 00:00 ~ 01:00	鹿児島県	Kagoshima (Kagosh	0.035
47	3/23 00:00 ~ 01:00	沖縄県	Okinawa (Uruma)	0.021
1	3/23 01:00 ~ 02:00	北海道	Hokkaido (Sapporo	0.028
2	3/23 01:00 ~ 02:00	青森県	Aomori (Aomori)	0.023
3	3/23 01:00 ~ 02:00	岩手県	Iwate (Morioka)	0.032
4	3/23 01:00 ~ 02:00	宮城県	Miyagi (Sendai)	
5	3/23 01:00 ~ 02:00	秋田県	Akita (Akita)	0.035
6	3/23 01:00 ~ 02:00	山形県	Yamagata (Yamaga	0.086
7	3/23 01:00 ~ 02:00	福島県	Fukushima (Futaba-gun)	
8	3/23 01:00 ~ 02:00	茨城県	Ibaraki (Mito)	0.33
9	3/23 01:00 ~ 02:00	栃木県	Tochigi (Itsunomiya	0.149
10	3/23 01:00 ~ 02:00	群馬県	Gunma (Maebashi)	0.109
11	3/23 01:00 ~ 02:00	埼玉県	Saitama (Saitama)	0.134
12	3/23 01:00 ~ 02:00	千葉県	Chiba (Ichihara)	0.1
13	3/23 01:00 ~ 02:00	東京都	Tokyo (Shinjuku-kı	0.152
14	3/23 01:00 ~ 02:00	神奈川県	Kanagawa (Chigasa	0.107
15	3/23 01:00 ~ 02:00	新潟県	Niigata (Niigata)	0.049
16	3/23 01:00 ~ 02:00	富山県	Toyama (Imizu)	0.048
17	3/23 01:00 ~ 02:00	石川県	Ishikawa (Kanazawa	0.052
18	3/23 01:00 ~ 02:00	福井県	Fukui (Fukui)	0.048
19	3/23 01:00 ~ 02:00	山梨県	Yamanashi (Kofu)	0.047
20	3/23 01:00 ~ 02:00	長野県	Nagano (Nagano)	0.054
21	3/23 01:00 ~ 02:00	岐阜県	Gifu (Kakamigahara	0.061
22	3/23 01:00 ~ 02:00	静岡県	Shizuoka (Shizuoka	0.049
23	3/23 01:00 ~ 02:00	愛知県	Aichi (Nagoya)	0.04
24	3/23 01:00 ~ 02:00	三重県	Mie (Yokkaichi)	0.046
25	3/23 01:00 ~ 02:00	滋賀県	Shiga (Ohtsu)	0.033
26	3/23 01:00 ~ 02:00	京都府	Kyoto (Kyoto)	0.038
27	3/23 01:00 ~ 02:00	大阪府	Osaka (Osaka)	0.042
28	3/23 01:00 ~ 02:00	兵庫県	Hyogo (Kobe)	0.037
29	3/23 01:00 ~ 02:00	奈良県	Nara (Nara)	0.048
30	3/23 01:00 ~ 02:00	和歌山県	Wakayama (Wakaya	0.032
31	3/23 01:00 ~ 02:00	鳥取県	Tottori (Touhaku-g	0.062
32	3/23 01:00 ~ 02:00	島根県	Shimane (Matsue)	0.037
33	3/23 01:00 ~ 02:00	岡山県	Okayama (Okayama	0.048
34	3/23 01:00 ~ 02:00	広島県	Hiroshima (Hiroshin	0.047
35	3/23 01:00 ~ 02:00	山口県	Yamaguchi (Yamagı	0.091
36	3/23 01:00 ~ 02:00	徳島県	Tokushima (Tokush	0.038
37	3/23 01:00 ~ 02:00	香川県	Kagawa (Takamatsı	0.052
38	3/23 01:00 ~ 02:00	愛媛県	Ehime (Matsuyama	0.048
39	3/23 01:00 ~ 02:00	高知県	Kochi (Kochi)	0.025
40	3/23 01:00 ~ 02:00	福岡県	Fukuoka (Dazaifu)	0.036

41	3/23 01:00 ~ 02:00	佐賀県	Saga (Saga)	0.04
42	3/23 01:00 ~ 02:00	長崎県	Nagasaki (Ohmura)	0.029
43	3/23 01:00 ~ 02:00	熊本県	Kumamoto (Uto)	0.027
44	3/23 01:00 ~ 02:00	大分県	Oita (Oita)	0.05
45	3/23 01:00 ~ 02:00	宮崎県	Miyazaki (Miyazaki)	0.027
46	3/23 01:00 ~ 02:00	鹿児島県	Kagoshima (Kagosh	0.035
47	3/23 01:00 ~ 02:00	沖縄県	Okinawa (Uruma)	0.021
1	3/23 02:00 ~ 03:00	北海道	Hokkaido (Sapporo)	0.028
2	3/23 02:00 ~ 03:00	青森県	Aomori (Aomori)	0.023
3	3/23 02:00 ~ 03:00	岩手県	Iwate (Morioka)	0.032
4	3/23 02:00 ~ 03:00	宮城県	Miyagi (Sendai)	
5	3/23 02:00 ~ 03:00	秋田県	Akita (Akita)	0.035
6	3/23 02:00 ~ 03:00	山形県	Yamagata (Yamaga	0.085
7	3/23 02:00 ~ 03:00	福島県	Fukushima (Futaba-gun)	
8	3/23 02:00 ~ 03:00	茨城県	Ibaraki (Mito)	0.33
9	3/23 02:00 ~ 03:00	栃木県	Tochigi (Itsunomiya	0.149
10	3/23 02:00 ~ 03:00	群馬県	Gunma (Maebashi)	0.108
11	3/23 02:00 ~ 03:00	埼玉県	Saitama (Saitama)	0.133
12	3/23 02:00 ~ 03:00	千葉県	Chiba (Ichihara)	0.099
13	3/23 02:00 ~ 03:00	東京都	Tokyo (Shinjuku-ku	0.152
14	3/23 02:00 ~ 03:00	神奈川県	Kanagawa (Chigasa	0.105
15	3/23 02:00 ~ 03:00	新潟県	Niigata (Niigata)	0.048
16	3/23 02:00 ~ 03:00	富山県	Toyama (Imizu)	0.048
17	3/23 02:00 ~ 03:00	石川県	Ishikawa (Kanazawa	0.05
18	3/23 02:00 ~ 03:00	福井県	Fukui (Fukui)	0.051
19	3/23 02:00 ~ 03:00	山梨県	Yamanashi (Kofu)	0.046
20	3/23 02:00 ~ 03:00	長野県	Nagano (Nagano)	0.054
21	3/23 02:00 ~ 03:00	岐阜県	Gifu (Kakamigahara	0.06
22	3/23 02:00 ~ 03:00	静岡県	Shizuoka (Shizuoka	0.05
23	3/23 02:00 ~ 03:00	愛知県	Aichi (Nagoya)	0.039
24	3/23 02:00 ~ 03:00	三重県	Mie (Yokkaichi)	0.047
25	3/23 02:00 ~ 03:00	滋賀県	Shiga (Ohtsu)	0.033
26	3/23 02:00 ~ 03:00	京都府	Kyoto (Kyoto)	0.038
27	3/23 02:00 ~ 03:00	大阪府	Osaka (Osaka)	0.043
28	3/23 02:00 ~ 03:00	兵庫県	Hyogo (Kobe)	0.037
29	3/23 02:00 ~ 03:00	奈良県	Nara (Nara)	0.048
30	3/23 02:00 ~ 03:00	和歌山県	Wakayama (Wakaya	0.032
31	3/23 02:00 ~ 03:00	鳥取県	Tottori (Touhaku-g	0.063
32	3/23 02:00 ~ 03:00	島根県	Shimane (Matsue)	0.037
33	3/23 02:00 ~ 03:00	岡山県	Okayama (Okayama	0.048
34	3/23 02:00 ~ 03:00	広島県	Hiroshima (Hiroshin	0.047
35	3/23 02:00 ~ 03:00	山口県	Yamaguchi (Yamagu	0.092
36	3/23 02:00 ~ 03:00	徳島県	Tokushima (Tokush	0.038
37	3/23 02:00 ~ 03:00	香川県	Kagawa (Takamatsu	0.052
38	3/23 02:00 ~ 03:00	愛媛県	Ehime (Matsuyama)	0.048
39	3/23 02:00 ~ 03:00	高知県	Kochi (Kochi)	0.025
40	3/23 02:00 ~ 03:00	福岡県	Fukuoka (Dazaifu)	0.037
41	3/23 02:00 ~ 03:00	佐賀県	Saga (Saga)	0.04
42	3/23 02:00 ~ 03:00	長崎県	Nagasaki (Ohmura)	0.029
43	3/23 02:00 ~ 03:00	熊本県	Kumamoto (Uto)	0.028
44	3/23 02:00 ~ 03:00	大分県	Oita (Oita)	0.05
45	3/23 02:00 ~ 03:00	宮崎県	Miyazaki (Miyazaki)	0.027
46	3/23 02:00 ~ 03:00	鹿児島県	Kagoshima (Kagosh	0.035
47	3/23 02:00 ~ 03:00	沖縄県	Okinawa (Uruma)	0.021
1	3/23 03:00 ~ 04:00	北海道	Hokkaido (Sapporo)	0.028
2	3/23 03:00 ~ 04:00	青森県	Aomori (Aomori)	0.023
3	3/23 03:00 ~ 04:00	岩手県	Iwate (Morioka)	0.033

4	3/23 03:00 ~ 04:00	宮城県	Miyagi (Sendai)	
5	3/23 03:00 ~ 04:00	秋田県	Akita (Akita)	0.035
6	3/23 03:00 ~ 04:00	山形県	Yamagata (Yamaga	0.085
7	3/23 03:00 ~ 04:00	福島県	Fukushima (Futaba-gun)	
8	3/23 03:00 ~ 04:00	茨城県	Ibaraki (Mito)	0.328
9	3/23 03:00 ~ 04:00	栃木県	Tochigi (Itsunomiya	0.148
10	3/23 03:00 ~ 04:00	群馬県	Gunma (Maebashi)	0.107
11	3/23 03:00 ~ 04:00	埼玉県	Saitama (Saitama)	0.128
12	3/23 03:00 ~ 04:00	千葉県	Chiba (Ichihara)	0.103
13	3/23 03:00 ~ 04:00	東京都	Tokyo (Shinjuku-ku	0.149
14	3/23 03:00 ~ 04:00	神奈川県	Kanagawa (Chigasa	0.103
15	3/23 03:00 ~ 04:00	新潟県	Niigata (Niigata)	0.05
16	3/23 03:00 ~ 04:00	富山県	Toyama (Imizu)	0.052
17	3/23 03:00 ~ 04:00	石川県	Ishikawa (Kanazawa	0.05
18	3/23 03:00 ~ 04:00	福井県	Fukui (Fukui)	0.05
19	3/23 03:00 ~ 04:00	山梨県	Yamanashi (Kofu)	0.047
20	3/23 03:00 ~ 04:00	長野県	Nagano (Nagano)	0.054
21	3/23 03:00 ~ 04:00	岐阜県	Gifu (Kakamigahara	0.06
22	3/23 03:00 ~ 04:00	静岡県	Shizuoka (Shizuoka	0.05
23	3/23 03:00 ~ 04:00	愛知県	Aichi (Nagoya)	0.039
24	3/23 03:00 ~ 04:00	三重県	Mie (Yokkaichi)	0.046
25	3/23 03:00 ~ 04:00	滋賀県	Shiga (Ohtsu)	0.033
26	3/23 03:00 ~ 04:00	京都府	Kyoto (Kyoto)	0.038
27	3/23 03:00 ~ 04:00	大阪府	Osaka (Osaka)	0.042
28	3/23 03:00 ~ 04:00	兵庫県	Hyogo (Kobe)	0.037
29	3/23 03:00 ~ 04:00	奈良県	Nara (Nara)	0.048
30	3/23 03:00 ~ 04:00	和歌山県	Wakayama (Wakaya	0.031
31	3/23 03:00 ~ 04:00	鳥取県	Tottori (Touhaku-g	0.063
32	3/23 03:00 ~ 04:00	島根県	Shimane (Matsue)	0.038
33	3/23 03:00 ~ 04:00	岡山県	Okayama (Okayama	0.049
34	3/23 03:00 ~ 04:00	広島県	Hiroshima (Hiroshin	0.048
35	3/23 03:00 ~ 04:00	山口県	Yamaguchi (Yamagu	0.092
36	3/23 03:00 ~ 04:00	徳島県	Tokushima (Tokush	0.038
37	3/23 03:00 ~ 04:00	香川県	Kagawa (Takamatsu	0.052
38	3/23 03:00 ~ 04:00	愛媛県	Ehime (Matsuyama)	0.048
39	3/23 03:00 ~ 04:00	高知県	Kochi (Kochi)	0.025
40	3/23 03:00 ~ 04:00	福岡県	Fukuoka (Dazaifu)	0.037
41	3/23 03:00 ~ 04:00	佐賀県	Saga (Saga)	0.04
42	3/23 03:00 ~ 04:00	長崎県	Nagasaki (Ohmura)	0.029
43	3/23 03:00 ~ 04:00	熊本県	Kumamoto (Uto)	0.028
44	3/23 03:00 ~ 04:00	大分県	Oita (Oita)	0.05
45	3/23 03:00 ~ 04:00	宮崎県	Miyazaki (Miyazaki)	0.027
46	3/23 03:00 ~ 04:00	鹿児島県	Kagoshima (Kagosh	0.035
47	3/23 03:00 ~ 04:00	沖縄県	Okinawa (Uruma)	0.021
1	3/23 04:00 ~ 05:00	北海道	Hokkaido (Sapporo)	0.028
2	3/23 04:00 ~ 05:00	青森県	Aomori (Aomori)	0.023
3	3/23 04:00 ~ 05:00	岩手県	Iwate (Morioka)	0.033
4	3/23 04:00 ~ 05:00	宮城県	Miyagi (Sendai)	
5	3/23 04:00 ~ 05:00	秋田県	Akita (Akita)	0.035
6	3/23 04:00 ~ 05:00	山形県	Yamagata (Yamaga	0.086
7	3/23 04:00 ~ 05:00	福島県	Fukushima (Futaba-gun)	
8	3/23 04:00 ~ 05:00	茨城県	Ibaraki (Mito)	0.325
9	3/23 04:00 ~ 05:00	栃木県	Tochigi (Itsunomiya	0.147
10	3/23 04:00 ~ 05:00	群馬県	Gunma (Maebashi)	0.107
11	3/23 04:00 ~ 05:00	埼玉県	Saitama (Saitama)	0.126
12	3/23 04:00 ~ 05:00	千葉県	Chiba (Ichihara)	0.102
13	3/23 04:00 ~ 05:00	東京都	Tokyo (Shinjuku-ku	0.148

14	3/23 04:00 ~ 05:00	神奈川県	Kanagawa (Chigasa	0.103
15	3/23 04:00 ~ 05:00	新潟県	Niigata (Niigata)	0.049
16	3/23 04:00 ~ 05:00	富山県	Toyama (Imizu)	0.05
17	3/23 04:00 ~ 05:00	石川県	Ishikawa (Kanazawa	0.049
18	3/23 04:00 ~ 05:00	福井県	Fukui (Fukui)	0.048
19	3/23 04:00 ~ 05:00	山梨県	Yamanashi (Kofu)	0.046
20	3/23 04:00 ~ 05:00	長野県	Nagano (Nagano)	0.053
21	3/23 04:00 ~ 05:00	岐阜県	Gifu (Kakamigahara	0.06
22	3/23 04:00 ~ 05:00	静岡県	Shizuoka (Shizuoka	0.05
23	3/23 04:00 ~ 05:00	愛知県	Aichi (Nagoya)	0.039
24	3/23 04:00 ~ 05:00	三重県	Mie (Yokkaichi)	0.046
25	3/23 04:00 ~ 05:00	滋賀県	Shiga (Ohtsu)	0.033
26	3/23 04:00 ~ 05:00	京都府	Kyoto (Kyoto)	0.038
27	3/23 04:00 ~ 05:00	大阪府	Osaka (Osaka)	0.042
28	3/23 04:00 ~ 05:00	兵庫県	Hyogo (Kobe)	0.037
29	3/23 04:00 ~ 05:00	奈良県	Nara (Nara)	0.048
30	3/23 04:00 ~ 05:00	和歌山県	Wakayama (Wakaya	0.032
31	3/23 04:00 ~ 05:00	鳥取県	Tottori (Touhaku-g	0.063
32	3/23 04:00 ~ 05:00	島根県	Shimane (Matsue)	0.037
33	3/23 04:00 ~ 05:00	岡山県	Okayama (Okayama	0.049
34	3/23 04:00 ~ 05:00	広島県	Hiroshima (Hiroshin	0.048
35	3/23 04:00 ~ 05:00	山口県	Yamaguchi (Yamagı	0.093
36	3/23 04:00 ~ 05:00	徳島県	Tokushima (Tokush	0.038
37	3/23 04:00 ~ 05:00	香川県	Kagawa (Takamatsı	0.053
38	3/23 04:00 ~ 05:00	愛媛県	Ehime (Matsuyama)	0.049
39	3/23 04:00 ~ 05:00	高知県	Kochi (Kochi)	0.025
40	3/23 04:00 ~ 05:00	福岡県	Fukuoka (Dazaifu)	0.037
41	3/23 04:00 ~ 05:00	佐賀県	Saga (Saga)	0.04
42	3/23 04:00 ~ 05:00	長崎県	Nagasaki (Ohmura)	0.029
43	3/23 04:00 ~ 05:00	熊本県	Kumamoto (Uto)	0.028
44	3/23 04:00 ~ 05:00	大分県	Oita (Oita)	0.049
45	3/23 04:00 ~ 05:00	宮崎県	Miyazaki (Miyazaki)	0.027
46	3/23 04:00 ~ 05:00	鹿児島県	Kagoshima (Kagosh	0.035
47	3/23 04:00 ~ 05:00	沖縄県	Okinawa (Uruma)	0.021
1	3/23 05:00 ~ 06:00	北海道	Hokkaido (Sapporo)	0.028
2	3/23 05:00 ~ 06:00	青森県	Aomori (Aomori)	0.023
3	3/23 05:00 ~ 06:00	岩手県	Iwate (Morioka)	0.032
4	3/23 05:00 ~ 06:00	宮城県	Miyagi (Sendai)	
5	3/23 05:00 ~ 06:00	秋田県	Akita (Akita)	0.035
6	3/23 05:00 ~ 06:00	山形県	Yamagata (Yamaga	0.086
7	3/23 05:00 ~ 06:00	福島県	Fukushima (Futaba-gun)	
8	3/23 05:00 ~ 06:00	茨城県	Ibaraki (Mito)	0.324
9	3/23 05:00 ~ 06:00	栃木県	Tochigi (Itsunomiya	0.147
10	3/23 05:00 ~ 06:00	群馬県	Gunma (Maebashi)	0.105
11	3/23 05:00 ~ 06:00	埼玉県	Saitama (Saitama)	0.125
12	3/23 05:00 ~ 06:00	千葉県	Chiba (Ichihara)	0.101
13	3/23 05:00 ~ 06:00	東京都	Tokyo (Shinjuku-kı	0.147
14	3/23 05:00 ~ 06:00	神奈川県	Kanagawa (Chigasa	0.102
15	3/23 05:00 ~ 06:00	新潟県	Niigata (Niigata)	0.048
16	3/23 05:00 ~ 06:00	富山県	Toyama (Imizu)	0.048
17	3/23 05:00 ~ 06:00	石川県	Ishikawa (Kanazawa	0.048
18	3/23 05:00 ~ 06:00	福井県	Fukui (Fukui)	0.047
19	3/23 05:00 ~ 06:00	山梨県	Yamanashi (Kofu)	0.046
20	3/23 05:00 ~ 06:00	長野県	Nagano (Nagano)	0.053
21	3/23 05:00 ~ 06:00	岐阜県	Gifu (Kakamigahara	0.06
22	3/23 05:00 ~ 06:00	静岡県	Shizuoka (Shizuoka	0.049
23	3/23 05:00 ~ 06:00	愛知県	Aichi (Nagoya)	0.039

http://www.mext.go.jp/component/a_menu/other/detail/_icsFiles/afieldfile/2011/03/15/1303577_05_1.pdf

24	3/23 05:00 ~ 06:00	三重県	Mie (Yokkaichi)	0.046
25	3/23 05:00 ~ 06:00	滋賀県	Shiga (Ohtsu)	0.033
26	3/23 05:00 ~ 06:00	京都府	Kyoto (Kyoto)	0.038
27	3/23 05:00 ~ 06:00	大阪府	Osaka (Osaka)	0.042
28	3/23 05:00 ~ 06:00	兵庫県	Hyogo (Kobe)	0.036
29	3/23 05:00 ~ 06:00	奈良県	Nara (Nara)	0.048
30	3/23 05:00 ~ 06:00	和歌山県	Wakayama (Wakaya	0.032
31	3/23 05:00 ~ 06:00	鳥取県	Tottori (Touhaku-g	0.063
32	3/23 05:00 ~ 06:00	島根県	Shimane (Matsue)	0.037
33	3/23 05:00 ~ 06:00	岡山県	Okayama (Okayama	0.049
34	3/23 05:00 ~ 06:00	広島県	Hiroshima (Hiroshin	0.049
35	3/23 05:00 ~ 06:00	山口県	Yamaguchi (Yamagı	0.094
36	3/23 05:00 ~ 06:00	徳島県	Tokushima (Tokush	0.038
37	3/23 05:00 ~ 06:00	香川県	Kagawa (Takamatsı	0.052
38	3/23 05:00 ~ 06:00	愛媛県	Ehime (Matsuyama.	0.049
39	3/23 05:00 ~ 06:00	高知県	Kochi (Kochi)	0.025
40	3/23 05:00 ~ 06:00	福岡県	Fukuoka (Dazaifu)	0.037
41	3/23 05:00 ~ 06:00	佐賀県	Saga (Saga)	0.04
42	3/23 05:00 ~ 06:00	長崎県	Nagasaki (Ohmura)	0.03
43	3/23 05:00 ~ 06:00	熊本県	Kumamoto (Uto)	0.028
44	3/23 05:00 ~ 06:00	大分県	Oita (Oita)	0.049
45	3/23 05:00 ~ 06:00	宮崎県	Miyazaki (Miyazaki)	0.027
46	3/23 05:00 ~ 06:00	鹿児島県	Kagoshima (Kagosh	0.035
47	3/23 05:00 ~ 06:00	沖縄県	Okinawa (Uruma)	0.021
1	3/23 06:00 ~ 07:00	北海道	Hokkaido (Sapporo.	0.028
2	3/23 06:00 ~ 07:00	青森県	Aomori (Aomori)	0.023
3	3/23 06:00 ~ 07:00	岩手県	Iwate (Morioka)	0.032
4	3/23 06:00 ~ 07:00	宮城県	Miyagi (Sendai)	
5	3/23 06:00 ~ 07:00	秋田県	Akita (Akita)	0.035
6	3/23 06:00 ~ 07:00	山形県	Yamagata (Yamaga	0.086
7	3/23 06:00 ~ 07:00	福島県	Fukushima (Futaba-gun)	
8	3/23 06:00 ~ 07:00	茨城県	Ibaraki (Mito)	0.323
9	3/23 06:00 ~ 07:00	栃木県	Tochigi (Itsunomiya	0.146
10	3/23 06:00 ~ 07:00	群馬県	Gunma (Maebashi)	0.104
11	3/23 06:00 ~ 07:00	埼玉県	Saitama (Saitama)	0.125
12	3/23 06:00 ~ 07:00	千葉県	Chiba (Ichihara)	0.098
13	3/23 06:00 ~ 07:00	東京都	Tokyo (Shinjuku-ku	0.147
14	3/23 06:00 ~ 07:00	神奈川県	Kanagawa (Chigasa	0.101
15	3/23 06:00 ~ 07:00	新潟県	Niigata (Niigata)	0.047
16	3/23 06:00 ~ 07:00	富山県	Toyama (Imizu)	0.047
17	3/23 06:00 ~ 07:00	石川県	Ishikawa (Kanazawa	0.047
18	3/23 06:00 ~ 07:00	福井県	Fukui (Fukui)	0.045
19	3/23 06:00 ~ 07:00	山梨県	Yamanashi (Kofu)	0.046
20	3/23 06:00 ~ 07:00	長野県	Nagano (Nagano)	0.054
21	3/23 06:00 ~ 07:00	岐阜県	Gifu (Kakamigahara	0.06
22	3/23 06:00 ~ 07:00	静岡県	Shizuoka (Shizuoka	0.049
23	3/23 06:00 ~ 07:00	愛知県	Aichi (Nagoya)	0.039
24	3/23 06:00 ~ 07:00	三重県	Mie (Yokkaichi)	0.046
25	3/23 06:00 ~ 07:00	滋賀県	Shiga (Ohtsu)	0.032
26	3/23 06:00 ~ 07:00	京都府	Kyoto (Kyoto)	0.038
27	3/23 06:00 ~ 07:00	大阪府	Osaka (Osaka)	0.042
28	3/23 06:00 ~ 07:00	兵庫県	Hyogo (Kobe)	0.036
29	3/23 06:00 ~ 07:00	奈良県	Nara (Nara)	0.048
30	3/23 06:00 ~ 07:00	和歌山県	Wakayama (Wakaya	0.031
31	3/23 06:00 ~ 07:00	鳥取県	Tottori (Touhaku-g	0.063
32	3/23 06:00 ~ 07:00	島根県	Shimane (Matsue)	0.037
33	3/23 06:00 ~ 07:00	岡山県	Okayama (Okayama	0.05

34	3/23 06:00 ~ 07:00	広島県	Hiroshima (Hiroshin	0.048
35	3/23 06:00 ~ 07:00	山口県	Yamaguchi (Yamagı	0.095
36	3/23 06:00 ~ 07:00	徳島県	Tokushima (Tokush	0.038
37	3/23 06:00 ~ 07:00	香川県	Kagawa (Takamatsı	0.052
38	3/23 06:00 ~ 07:00	愛媛県	Ehime (Matsuyama)	0.05
39	3/23 06:00 ~ 07:00	高知県	Kochi (Kochi)	0.025
40	3/23 06:00 ~ 07:00	福岡県	Fukuoka (Dazaifu)	0.037
41	3/23 06:00 ~ 07:00	佐賀県	Saga (Saga)	0.041
42	3/23 06:00 ~ 07:00	長崎県	Nagasaki (Ohmura)	0.03
43	3/23 06:00 ~ 07:00	熊本県	Kumamoto (Uto)	0.029
44	3/23 06:00 ~ 07:00	大分県	Oita (Oita)	0.05
45	3/23 06:00 ~ 07:00	宮崎県	Miyazaki (Miyazaki)	0.027
46	3/23 06:00 ~ 07:00	鹿児島県	Kagoshima (Kagosh	0.035
47	3/23 06:00 ~ 07:00	沖縄県	Okinawa (Uruma)	0.021
1	3/23 07:00 ~ 08:00	北海道	Hokkaido (Sapporo)	0.028
2	3/23 07:00 ~ 08:00	青森県	Aomori (Aomori)	0.024
3	3/23 07:00 ~ 08:00	岩手県	Iwate (Morioka)	0.032
4	3/23 07:00 ~ 08:00	宮城県	Miyagi (Sendai)	
5	3/23 07:00 ~ 08:00	秋田県	Akita (Akita)	0.034
6	3/23 07:00 ~ 08:00	山形県	Yamagata (Yamaga	0.086
7	3/23 07:00 ~ 08:00	福島県	Fukushima (Futaba-gun)	
8	3/23 07:00 ~ 08:00	茨城県	Ibaraki (Mito)	0.322
9	3/23 07:00 ~ 08:00	栃木県	Tochigi (Itsunomiya	0.145
10	3/23 07:00 ~ 08:00	群馬県	Gunma (Maebashi)	0.103
11	3/23 07:00 ~ 08:00	埼玉県	Saitama (Saitama)	0.124
12	3/23 07:00 ~ 08:00	千葉県	Chiba (Ichihara)	0.1
13	3/23 07:00 ~ 08:00	東京都	Tokyo (Shinjuku-kı	0.146
14	3/23 07:00 ~ 08:00	神奈川県	Kanagawa (Chigasa	0.101
15	3/23 07:00 ~ 08:00	新潟県	Niigata (Niigata)	0.047
16	3/23 07:00 ~ 08:00	富山県	Toyama (Imizu)	0.047
17	3/23 07:00 ~ 08:00	石川県	Ishikawa (Kanazawa	0.047
18	3/23 07:00 ~ 08:00	福井県	Fukui (Fukui)	0.045
19	3/23 07:00 ~ 08:00	山梨県	Yamanashi (Kofu)	0.046
20	3/23 07:00 ~ 08:00	長野県	Nagano (Nagano)	0.053
21	3/23 07:00 ~ 08:00	岐阜県	Gifu (Kakamigahara	0.06
22	3/23 07:00 ~ 08:00	静岡県	Shizuoka (Shizuoka	0.049
23	3/23 07:00 ~ 08:00	愛知県	Aichi (Nagoya)	0.039
24	3/23 07:00 ~ 08:00	三重県	Mie (Yokkaichi)	0.046
25	3/23 07:00 ~ 08:00	滋賀県	Shiga (Ohtsu)	0.032
26	3/23 07:00 ~ 08:00	京都府	Kyoto (Kyoto)	0.038
27	3/23 07:00 ~ 08:00	大阪府	Osaka (Osaka)	0.043
28	3/23 07:00 ~ 08:00	兵庫県	Hyogo (Kobe)	0.036
29	3/23 07:00 ~ 08:00	奈良県	Nara (Nara)	0.047
30	3/23 07:00 ~ 08:00	和歌山県	Wakayama (Wakaya	0.031
31	3/23 07:00 ~ 08:00	鳥取県	Tottori (Touhaku-g	0.063
32	3/23 07:00 ~ 08:00	島根県	Shimane (Matsue)	0.037
33	3/23 07:00 ~ 08:00	岡山県	Okayama (Okayama	0.05
34	3/23 07:00 ~ 08:00	広島県	Hiroshima (Hiroshin	0.049
35	3/23 07:00 ~ 08:00	山口県	Yamaguchi (Yamagı	0.095
36	3/23 07:00 ~ 08:00	徳島県	Tokushima (Tokush	0.038
37	3/23 07:00 ~ 08:00	香川県	Kagawa (Takamatsı	0.052
38	3/23 07:00 ~ 08:00	愛媛県	Ehime (Matsuyama)	0.05
39	3/23 07:00 ~ 08:00	高知県	Kochi (Kochi)	0.025
40	3/23 07:00 ~ 08:00	福岡県	Fukuoka (Dazaifu)	0.037
41	3/23 07:00 ~ 08:00	佐賀県	Saga (Saga)	0.041
42	3/23 07:00 ~ 08:00	長崎県	Nagasaki (Ohmura)	0.029
43	3/23 07:00 ~ 08:00	熊本県	Kumamoto (Uto)	0.029

44	3/23 07:00 ~ 08:00	大分県	Oita (Oita)	0.05
45	3/23 07:00 ~ 08:00	宮崎県	Miyazaki (Miyazaki)	0.027
46	3/23 07:00 ~ 08:00	鹿児島県	Kagoshima (Kagosh	0.035
47	3/23 07:00 ~ 08:00	沖縄県	Okinawa (Uruma)	0.021
1	3/23 08:00 ~ 09:00	北海道	Hokkaido (Sapporo)	0.028
2	3/23 08:00 ~ 09:00	青森県	Aomori (Aomori)	0.023
3	3/23 08:00 ~ 09:00	岩手県	Iwate (Morioka)	0.032
4	3/23 08:00 ~ 09:00	宮城県	Miyagi (Sendai)	
5	3/23 08:00 ~ 09:00	秋田県	Akita (Akita)	0.035
6	3/23 08:00 ~ 09:00	山形県	Yamagata (Yamaga	0.086
7	3/23 08:00 ~ 09:00	福島県	Fukushima (Futaba-gun)	
8	3/23 08:00 ~ 09:00	茨城県	Ibaraki (Mito)	0.322
9	3/23 08:00 ~ 09:00	栃木県	Tochigi (Itsunomiya	0.145
10	3/23 08:00 ~ 09:00	群馬県	Gunma (Maebashi)	0.102
11	3/23 08:00 ~ 09:00	埼玉県	Saitama (Saitama)	0.123
12	3/23 08:00 ~ 09:00	千葉県	Chiba (Ichihara)	0.097
13	3/23 08:00 ~ 09:00	東京都	Tokyo (Shinjuku-ku	0.146
14	3/23 08:00 ~ 09:00	神奈川県	Kanagawa (Chigasa	0.099
15	3/23 08:00 ~ 09:00	新潟県	Niigata (Niigata)	0.046
16	3/23 08:00 ~ 09:00	富山県	Toyama (Imizu)	0.047
17	3/23 08:00 ~ 09:00	石川県	Ishikawa (Kanazawa	0.047
18	3/23 08:00 ~ 09:00	福井県	Fukui (Fukui)	0.045
19	3/23 08:00 ~ 09:00	山梨県	Yamanashi (Kofu)	0.046
20	3/23 08:00 ~ 09:00	長野県	Nagano (Nagano)	0.053
21	3/23 08:00 ~ 09:00	岐阜県	Gifu (Kakamigahara	0.06
22	3/23 08:00 ~ 09:00	静岡県	Shizuoka (Shizuoka	0.049
23	3/23 08:00 ~ 09:00	愛知県	Aichi (Nagoya)	0.039
24	3/23 08:00 ~ 09:00	三重県	Mie (Yokkaichi)	0.046
25	3/23 08:00 ~ 09:00	滋賀県	Shiga (Ohtsu)	0.032
26	3/23 08:00 ~ 09:00	京都府	Kyoto (Kyoto)	0.037
27	3/23 08:00 ~ 09:00	大阪府	Osaka (Osaka)	0.042
28	3/23 08:00 ~ 09:00	兵庫県	Hyogo (Kobe)	0.036
29	3/23 08:00 ~ 09:00	奈良県	Nara (Nara)	0.047
30	3/23 08:00 ~ 09:00	和歌山県	Wakayama (Wakaya	0.031
31	3/23 08:00 ~ 09:00	鳥取県	Tottori (Touhaku-g	0.062
32	3/23 08:00 ~ 09:00	島根県	Shimane (Matsue)	0.037
33	3/23 08:00 ~ 09:00	岡山県	Okayama (Okayama	0.049
34	3/23 08:00 ~ 09:00	広島県	Hiroshima (Hiroshin	0.048
35	3/23 08:00 ~ 09:00	山口県	Yamaguchi (Yamagu	0.095
36	3/23 08:00 ~ 09:00	徳島県	Tokushima (Tokush	0.037
37	3/23 08:00 ~ 09:00	香川県	Kagawa (Takamatsu	0.052
38	3/23 08:00 ~ 09:00	愛媛県	Ehime (Matsuyama)	0.049
39	3/23 08:00 ~ 09:00	高知県	Kochi (Kochi)	0.025
40	3/23 08:00 ~ 09:00	福岡県	Fukuoka (Dazaifu)	0.038
41	3/23 08:00 ~ 09:00	佐賀県	Saga (Saga)	0.04
42	3/23 08:00 ~ 09:00	長崎県	Nagasaki (Ohmura)	0.029
43	3/23 08:00 ~ 09:00	熊本県	Kumamoto (Uto)	0.029
44	3/23 08:00 ~ 09:00	大分県	Oita (Oita)	0.05
45	3/23 08:00 ~ 09:00	宮崎県	Miyazaki (Miyazaki)	0.027
46	3/23 08:00 ~ 09:00	鹿児島県	Kagoshima (Kagosh	0.035
47	3/23 08:00 ~ 09:00	沖縄県	Okinawa (Uruma)	0.021
1	3/23 09:00 ~ 10:00	北海道	Hokkaido (Sapporo)	0.028
2	3/23 09:00 ~ 10:00	青森県	Aomori (Aomori)	0.024
3	3/23 09:00 ~ 10:00	岩手県	Iwate (Morioka)	0.031
4	3/23 09:00 ~ 10:00	宮城県	Miyagi (Sendai)	
5	3/23 09:00 ~ 10:00	秋田県	Akita (Akita)	0.034
6	3/23 09:00 ~ 10:00	山形県	Yamagata (Yamaga	0.085

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7	3/23 09:00 ~ 10:00	福島県	Fukushima (Futaba-gun)	
8	3/23 09:00 ~ 10:00	茨城県	Ibaraki (Mito)	0.321
9	3/23 09:00 ~ 10:00	栃木県	Tochigi (Itsunomiya	0.144
10	3/23 09:00 ~ 10:00	群馬県	Gunma (Maebashi)	0.101
11	3/23 09:00 ~ 10:00	埼玉県	Saitama (Saitama)	0.123
12	3/23 09:00 ~ 10:00	千葉県	Chiba (Ichihara)	0.097
13	3/23 09:00 ~ 10:00	東京都	Tokyo (Shinjuku-ku	0.146
14	3/23 09:00 ~ 10:00	神奈川県	Kanagawa (Chigasa	0.099
15	3/23 09:00 ~ 10:00	新潟県	Niigata (Niigata)	0.046
16	3/23 09:00 ~ 10:00	富山県	Toyama (Imizu)	0.047
17	3/23 09:00 ~ 10:00	石川県	Ishikawa (Kanazawa	0.046
18	3/23 09:00 ~ 10:00	福井県	Fukui (Fukui)	0.045
19	3/23 09:00 ~ 10:00	山梨県	Yamanashi (Kofu)	0.045
20	3/23 09:00 ~ 10:00	長野県	Nagano (Nagano)	0.052
21	3/23 09:00 ~ 10:00	岐阜県	Gifu (Kakamigahara	0.06
22	3/23 09:00 ~ 10:00	静岡県	Shizuoka (Shizuoka	0.049
23	3/23 09:00 ~ 10:00	愛知県	Aichi (Nagoya)	0.039
24	3/23 09:00 ~ 10:00	三重県	Mie (Yokkaichi)	0.045
25	3/23 09:00 ~ 10:00	滋賀県	Shiga (Ohtsu)	0.032
26	3/23 09:00 ~ 10:00	京都府	Kyoto (Kyoto)	0.037
27	3/23 09:00 ~ 10:00	大阪府	Osaka (Osaka)	0.042
28	3/23 09:00 ~ 10:00	兵庫県	Hyogo (Kobe)	0.036
29	3/23 09:00 ~ 10:00	奈良県	Nara (Nara)	0.047
30	3/23 09:00 ~ 10:00	和歌山県	Wakayama (Wakaya	0.031
31	3/23 09:00 ~ 10:00	鳥取県	Tottori (Touhaku-g	0.063
32	3/23 09:00 ~ 10:00	島根県	Shimane (Matsue)	0.037
33	3/23 09:00 ~ 10:00	岡山県	Okayama (Okayama	0.049
34	3/23 09:00 ~ 10:00	広島県	Hiroshima (Hiroshin	0.047
35	3/23 09:00 ~ 10:00	山口県	Yamaguchi (Yamagu	0.092
36	3/23 09:00 ~ 10:00	徳島県	Tokushima (Tokush	0.037
37	3/23 09:00 ~ 10:00	香川県	Kagawa (Takamatsu	0.052
38	3/23 09:00 ~ 10:00	愛媛県	Ehime (Matsuyama)	0.048
39	3/23 09:00 ~ 10:00	高知県	Kochi (Kochi)	0.025
40	3/23 09:00 ~ 10:00	福岡県	Fukuoka (Dazaifu)	0.037
41	3/23 09:00 ~ 10:00	佐賀県	Saga (Saga)	0.04
42	3/23 09:00 ~ 10:00	長崎県	Nagasaki (Ohmura)	0.029
43	3/23 09:00 ~ 10:00	熊本県	Kumamoto (Uto)	0.028
44	3/23 09:00 ~ 10:00	大分県	Oita (Oita)	0.05
45	3/23 09:00 ~ 10:00	宮崎県	Miyazaki (Miyazaki)	0.027
46	3/23 09:00 ~ 10:00	鹿児島県	Kagoshima (Kagosh	0.034
47	3/23 09:00 ~ 10:00	沖縄県	Okinawa (Uruma)	0.021
1	3/23 10:00 ~ 11:00	北海道	Hokkaido (Sapporo)	0.028
2	3/23 10:00 ~ 11:00	青森県	Aomori (Aomori)	0.024
3	3/23 10:00 ~ 11:00	岩手県	Iwate (Morioka)	0.031
4	3/23 10:00 ~ 11:00	宮城県	Miyagi (Sendai)	
5	3/23 10:00 ~ 11:00	秋田県	Akita (Akita)	0.035
6	3/23 10:00 ~ 11:00	山形県	Yamagata (Yamaga	0.085
7	3/23 10:00 ~ 11:00	福島県	Fukushima (Futaba-gun)	
8	3/23 10:00 ~ 11:00	茨城県	Ibaraki (Mito)	0.32
9	3/23 10:00 ~ 11:00	栃木県	Tochigi (Itsunomiya	0.144
10	3/23 10:00 ~ 11:00	群馬県	Gunma (Maebashi)	0.1
11	3/23 10:00 ~ 11:00	埼玉県	Saitama (Saitama)	0.122
12	3/23 10:00 ~ 11:00	千葉県	Chiba (Ichihara)	0.097
13	3/23 10:00 ~ 11:00	東京都	Tokyo (Shinjuku-ku	0.145
14	3/23 10:00 ~ 11:00	神奈川県	Kanagawa (Chigasa	0.098
15	3/23 10:00 ~ 11:00	新潟県	Niigata (Niigata)	0.046
16	3/23 10:00 ~ 11:00	富山県	Toyama (Imizu)	0.048

17	3/23 10:00 ~ 11:00	石川県	Ishikawa (Kanazawa	0.046
18	3/23 10:00 ~ 11:00	福井県	Fukui (Fukui)	0.045
19	3/23 10:00 ~ 11:00	山梨県	Yamanashi (Kofu)	0.046
20	3/23 10:00 ~ 11:00	長野県	Nagano (Nagano)	0.053
21	3/23 10:00 ~ 11:00	岐阜県	Gifu (Kakamigahara	0.06
22	3/23 10:00 ~ 11:00	静岡県	Shizuoka (Shizuoka	0.051
23	3/23 10:00 ~ 11:00	愛知県	Aichi (Nagoya)	0.039
24	3/23 10:00 ~ 11:00	三重県	Mie (Yokkaichi)	0.045
25	3/23 10:00 ~ 11:00	滋賀県	Shiga (Ohtsu)	0.032
26	3/23 10:00 ~ 11:00	京都府	Kyoto (Kyoto)	0.037
27	3/23 10:00 ~ 11:00	大阪府	Osaka (Osaka)	0.042
28	3/23 10:00 ~ 11:00	兵庫県	Hyogo (Kobe)	0.036
29	3/23 10:00 ~ 11:00	奈良県	Nara (Nara)	0.047
30	3/23 10:00 ~ 11:00	和歌山県	Wakayama (Wakaya	0.031
31	3/23 10:00 ~ 11:00	鳥取県	Tottori (Touhaku-g	0.062
32	3/23 10:00 ~ 11:00	島根県	Shimane (Matsue)	0.036
33	3/23 10:00 ~ 11:00	岡山県	Okayama (Okayama	0.049
34	3/23 10:00 ~ 11:00	広島県	Hiroshima (Hiroshin	0.047
35	3/23 10:00 ~ 11:00	山口県	Yamaguchi (Yamagu	0.09
36	3/23 10:00 ~ 11:00	徳島県	Tokushima (Tokush	0.037
37	3/23 10:00 ~ 11:00	香川県	Kagawa (Takamatsu	0.053
38	3/23 10:00 ~ 11:00	愛媛県	Ehime (Matsuyama)	0.047
39	3/23 10:00 ~ 11:00	高知県	Kochi (Kochi)	0.025
40	3/23 10:00 ~ 11:00	福岡県	Fukuoka (Dazaifu)	0.036
41	3/23 10:00 ~ 11:00	佐賀県	Saga (Saga)	0.04
42	3/23 10:00 ~ 11:00	長崎県	Nagasaki (Ohmura)	0.029
43	3/23 10:00 ~ 11:00	熊本県	Kumamoto (Uto)	0.027
44	3/23 10:00 ~ 11:00	大分県	Oita (Oita)	0.05
45	3/23 10:00 ~ 11:00	宮崎県	Miyazaki (Miyazaki)	0.026
46	3/23 10:00 ~ 11:00	鹿児島県	Kagoshima (Kagosh	0.034
47	3/23 10:00 ~ 11:00	沖縄県	Okinawa (Uruma)	0.021
1	3/23 11:00 ~ 12:00	北海道	Hokkaido (Sapporo)	0.028
2	3/23 11:00 ~ 12:00	青森県	Aomori (Aomori)	0.025
3	3/23 11:00 ~ 12:00	岩手県	Iwate (Morioka)	0.031
4	3/23 11:00 ~ 12:00	宮城県	Miyagi (Sendai)	
5	3/23 11:00 ~ 12:00	秋田県	Akita (Akita)	0.036
6	3/23 11:00 ~ 12:00	山形県	Yamagata (Yamaga	0.085
7	3/23 11:00 ~ 12:00	福島県	Fukushima (Futaba-gun)	
8	3/23 11:00 ~ 12:00	茨城県	Ibaraki (Mito)	0.33
9	3/23 11:00 ~ 12:00	栃木県	Tochigi (Itsunomiya	0.143
10	3/23 11:00 ~ 12:00	群馬県	Gunma (Maebashi)	0.099
11	3/23 11:00 ~ 12:00	埼玉県	Saitama (Saitama)	0.122
12	3/23 11:00 ~ 12:00	千葉県	Chiba (Ichihara)	0.097
13	3/23 11:00 ~ 12:00	東京都	Tokyo (Shinjuku-ku	0.145
14	3/23 11:00 ~ 12:00	神奈川県	Kanagawa (Chigasa	0.098
15	3/23 11:00 ~ 12:00	新潟県	Niigata (Niigata)	0.046
16	3/23 11:00 ~ 12:00	富山県	Toyama (Imizu)	0.049
17	3/23 11:00 ~ 12:00	石川県	Ishikawa (Kanazawa	0.047
18	3/23 11:00 ~ 12:00	福井県	Fukui (Fukui)	0.045
19	3/23 11:00 ~ 12:00	山梨県	Yamanashi (Kofu)	0.046
20	3/23 11:00 ~ 12:00	長野県	Nagano (Nagano)	0.053
21	3/23 11:00 ~ 12:00	岐阜県	Gifu (Kakamigahara	0.06
22	3/23 11:00 ~ 12:00	静岡県	Shizuoka (Shizuoka	0.051
23	3/23 11:00 ~ 12:00	愛知県	Aichi (Nagoya)	0.038
24	3/23 11:00 ~ 12:00	三重県	Mie (Yokkaichi)	0.045
25	3/23 11:00 ~ 12:00	滋賀県	Shiga (Ohtsu)	0.032
26	3/23 11:00 ~ 12:00	京都府	Kyoto (Kyoto)	0.037

27	3/23 11:00 ~ 12:00	大阪府	Osaka (Osaka)	0.042
28	3/23 11:00 ~ 12:00	兵庫県	Hyogo (Kobe)	0.036
29	3/23 11:00 ~ 12:00	奈良県	Nara (Nara)	0.047
30	3/23 11:00 ~ 12:00	和歌山県	Wakayama (Wakaya	0.031
31	3/23 11:00 ~ 12:00	鳥取県	Tottori (Touhaku-g	0.063
32	3/23 11:00 ~ 12:00	島根県	Shimane (Matsue)	0.036
33	3/23 11:00 ~ 12:00	岡山県	Okayama (Okayama	0.048
34	3/23 11:00 ~ 12:00	広島県	Hiroshima (Hiroshin	0.047
35	3/23 11:00 ~ 12:00	山口県	Yamaguchi (Yamagı	0.09
36	3/23 11:00 ~ 12:00	徳島県	Tokushima (Tokush	0.038
37	3/23 11:00 ~ 12:00	香川県	Kagawa (Takamatsı	0.052
38	3/23 11:00 ~ 12:00	愛媛県	Ehime (Matsuyama)	0.047
39	3/23 11:00 ~ 12:00	高知県	Kochi (Kochi)	0.025
40	3/23 11:00 ~ 12:00	福岡県	Fukuoka (Dazaifu)	0.036
41	3/23 11:00 ~ 12:00	佐賀県	Saga (Saga)	0.039
42	3/23 11:00 ~ 12:00	長崎県	Nagasaki (Ohmura)	0.029
43	3/23 11:00 ~ 12:00	熊本県	Kumamoto (Uto)	0.027
44	3/23 11:00 ~ 12:00	大分県	Oita (Oita)	0.049
45	3/23 11:00 ~ 12:00	宮崎県	Miyazaki (Miyazaki)	0.027
46	3/23 11:00 ~ 12:00	鹿児島県	Kagoshima (Kagosh	0.034
47	3/23 11:00 ~ 12:00	沖縄県	Okinawa (Uruma)	0.021
1	3/23 12:00 ~ 13:00	北海道	Hokkaido (Sapporo)	0.028
2	3/23 12:00 ~ 13:00	青森県	Aomori (Aomori)	0.024
3	3/23 12:00 ~ 13:00	岩手県	Iwate (Morioka)	0.031
4	3/23 12:00 ~ 13:00	宮城県	Miyagi (Sendai)	
5	3/23 12:00 ~ 13:00	秋田県	Akita (Akita)	0.037
6	3/23 12:00 ~ 13:00	山形県	Yamagata (Yamaga	0.084
7	3/23 12:00 ~ 13:00	福島県	Fukushima (Futaba-gun)	
8	3/23 12:00 ~ 13:00	茨城県	Ibaraki (Mito)	0.361
9	3/23 12:00 ~ 13:00	栃木県	Tochigi (Itsunomiya	0.144
10	3/23 12:00 ~ 13:00	群馬県	Gunma (Maebashi)	0.098
11	3/23 12:00 ~ 13:00	埼玉県	Saitama (Saitama)	0.121
12	3/23 12:00 ~ 13:00	千葉県	Chiba (Ichihara)	0.096
13	3/23 12:00 ~ 13:00	東京都	Tokyo (Shinjuku-kı	0.144
14	3/23 12:00 ~ 13:00	神奈川県	Kanagawa (Chigasa	0.097
15	3/23 12:00 ~ 13:00	新潟県	Niigata (Niigata)	0.046
16	3/23 12:00 ~ 13:00	富山県	Toyama (Imizu)	0.048
17	3/23 12:00 ~ 13:00	石川県	Ishikawa (Kanazawa	0.047
18	3/23 12:00 ~ 13:00	福井県	Fukui (Fukui)	0.045
19	3/23 12:00 ~ 13:00	山梨県	Yamanashi (Kofu)	0.046
20	3/23 12:00 ~ 13:00	長野県	Nagano (Nagano)	0.052
21	3/23 12:00 ~ 13:00	岐阜県	Gifu (Kakamigahara	0.06
22	3/23 12:00 ~ 13:00	静岡県	Shizuoka (Shizuoka	0.051
23	3/23 12:00 ~ 13:00	愛知県	Aichi (Nagoya)	0.039
24	3/23 12:00 ~ 13:00	三重県	Mie (Yokkaichi)	0.045
25	3/23 12:00 ~ 13:00	滋賀県	Shiga (Ohtsu)	0.032
26	3/23 12:00 ~ 13:00	京都府	Kyoto (Kyoto)	0.037
27	3/23 12:00 ~ 13:00	大阪府	Osaka (Osaka)	0.042
28	3/23 12:00 ~ 13:00	兵庫県	Hyogo (Kobe)	0.036
29	3/23 12:00 ~ 13:00	奈良県	Nara (Nara)	0.047
30	3/23 12:00 ~ 13:00	和歌山県	Wakayama (Wakaya	0.031
31	3/23 12:00 ~ 13:00	鳥取県	Tottori (Touhaku-g	0.062
32	3/23 12:00 ~ 13:00	島根県	Shimane (Matsue)	0.036
33	3/23 12:00 ~ 13:00	岡山県	Okayama (Okayama	0.048
34	3/23 12:00 ~ 13:00	広島県	Hiroshima (Hiroshin	0.047
35	3/23 12:00 ~ 13:00	山口県	Yamaguchi (Yamagı	0.09
36	3/23 12:00 ~ 13:00	徳島県	Tokushima (Tokush	0.037

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37	3/23 12:00 ~ 13:00	香川県	Kagawa (Takamatsı	0.052
38	3/23 12:00 ~ 13:00	愛媛県	Ehime (Matsuyama	0.047
39	3/23 12:00 ~ 13:00	高知県	Kochi (Kochi)	0.025
40	3/23 12:00 ~ 13:00	福岡県	Fukuoka (Dazaifu)	0.037
41	3/23 12:00 ~ 13:00	佐賀県	Saga (Saga)	0.039
42	3/23 12:00 ~ 13:00	長崎県	Nagasaki (Ohmura)	0.029
43	3/23 12:00 ~ 13:00	熊本県	Kumamoto (Uto)	0.027
44	3/23 12:00 ~ 13:00	大分県	Oita (Oita)	0.049
45	3/23 12:00 ~ 13:00	宮崎県	Miyazaki (Miyazaki)	0.026
46	3/23 12:00 ~ 13:00	鹿児島県	Kagoshima (Kagosh	0.034
47	3/23 12:00 ~ 13:00	沖縄県	Okinawa (Uruma)	0.021
1	3/23 13:00 ~ 14:00	北海道	Hokkaido (Sapporo	0.029
2	3/23 13:00 ~ 14:00	青森県	Aomori (Aomori)	0.024
3	3/23 13:00 ~ 14:00	岩手県	Iwate (Morioka)	0.031
4	3/23 13:00 ~ 14:00	宮城県	Miyagi (Sendai)	
5	3/23 13:00 ~ 14:00	秋田県	Akita (Akita)	0.036
6	3/23 13:00 ~ 14:00	山形県	Yamagata (Yamaga	0.084
7	3/23 13:00 ~ 14:00	福島県	Fukushima (Futaba-gun)	
8	3/23 13:00 ~ 14:00	茨城県	Ibaraki (Mito)	0.35
9	3/23 13:00 ~ 14:00	栃木県	Tochigi (Itsunomiya	0.143
10	3/23 13:00 ~ 14:00	群馬県	Gunma (Maebashi)	0.097
11	3/23 13:00 ~ 14:00	埼玉県	Saitama (Saitama)	0.121
12	3/23 13:00 ~ 14:00	千葉県	Chiba (Ichihara)	0.097
13	3/23 13:00 ~ 14:00	東京都	Tokyo (Shinjuku-kι	0.144
14	3/23 13:00 ~ 14:00	神奈川県	Kanagawa (Chigasa	0.097
15	3/23 13:00 ~ 14:00	新潟県	Niigata (Niigata)	0.046
16	3/23 13:00 ~ 14:00	富山県	Toyama (Imizu)	0.049
17	3/23 13:00 ~ 14:00	石川県	Ishikawa (Kanazawa	0.047
18	3/23 13:00 ~ 14:00	福井県	Fukui (Fukui)	0.045
19	3/23 13:00 ~ 14:00	山梨県	Yamanashi (Kofu)	0.046
20	3/23 13:00 ~ 14:00	長野県	Nagano (Nagano)	0.052
21	3/23 13:00 ~ 14:00	岐阜県	Gifu (Kakamigahara	0.06
22	3/23 13:00 ~ 14:00	静岡県	Shizuoka (Shizuoka	0.05
23	3/23 13:00 ~ 14:00	愛知県	Aichi (Nagoya)	0.039
24	3/23 13:00 ~ 14:00	三重県	Mie (Yokkaichi)	0.045
25	3/23 13:00 ~ 14:00	滋賀県	Shiga (Ohtsu)	0.032
26	3/23 13:00 ~ 14:00	京都府	Kyoto (Kyoto)	0.037
27	3/23 13:00 ~ 14:00	大阪府	Osaka (Osaka)	0.042
28	3/23 13:00 ~ 14:00	兵庫県	Hyogo (Kobe)	0.036
29	3/23 13:00 ~ 14:00	奈良県	Nara (Nara)	0.047
30	3/23 13:00 ~ 14:00	和歌山県	Wakayama (Wakaya	0.031
31	3/23 13:00 ~ 14:00	鳥取県	Tottori (Touhaku-g	0.063
32	3/23 13:00 ~ 14:00	島根県	Shimane (Matsue)	0.036
33	3/23 13:00 ~ 14:00	岡山県	Okayama (Okayama	0.048
34	3/23 13:00 ~ 14:00	広島県	Hiroshima (Hiroshin	0.046
35	3/23 13:00 ~ 14:00	山口県	Yamaguchi (Yamagı	0.09
36	3/23 13:00 ~ 14:00	徳島県	Tokushima (Tokusł	0.038
37	3/23 13:00 ~ 14:00	香川県	Kagawa (Takamatsı	0.052
38	3/23 13:00 ~ 14:00	愛媛県	Ehime (Matsuyama	0.047
39	3/23 13:00 ~ 14:00	高知県	Kochi (Kochi)	0.025
40	3/23 13:00 ~ 14:00	福岡県	Fukuoka (Dazaifu)	0.036
41	3/23 13:00 ~ 14:00	佐賀県	Saga (Saga)	0.039
42	3/23 13:00 ~ 14:00	長崎県	Nagasaki (Ohmura)	0.029
43	3/23 13:00 ~ 14:00	熊本県	Kumamoto (Uto)	0.027
44	3/23 13:00 ~ 14:00	大分県	Oita (Oita)	0.049
45	3/23 13:00 ~ 14:00	宮崎県	Miyazaki (Miyazaki)	0.026
46	3/23 13:00 ~ 14:00	鹿児島県	Kagoshima (Kagosh	0.034

47	3/23 13:00 ~ 14:00	沖縄県	Okinawa (Uruma)	0.021
1	3/23 14:00 ~ 15:00	北海道	Hokkaido (Sapporo)	0.029
2	3/23 14:00 ~ 15:00	青森県	Aomori (Aomori)	0.027
3	3/23 14:00 ~ 15:00	岩手県	Iwate (Morioka)	0.031
4	3/23 14:00 ~ 15:00	宮城県	Miyagi (Sendai)	
5	3/23 14:00 ~ 15:00	秋田県	Akita (Akita)	0.036
6	3/23 14:00 ~ 15:00	山形県	Yamagata (Yamaga	0.084
7	3/23 14:00 ~ 15:00	福島県	Fukushima (Futaba-gun)	
8	3/23 14:00 ~ 15:00	茨城県	Ibaraki (Mito)	0.357
9	3/23 14:00 ~ 15:00	栃木県	Tochigi (Itsunomiya	0.142
10	3/23 14:00 ~ 15:00	群馬県	Gunma (Maebashi)	0.097
11	3/23 14:00 ~ 15:00	埼玉県	Saitama (Saitama)	0.12
12	3/23 14:00 ~ 15:00	千葉県	Chiba (Ichihara)	0.101
13	3/23 14:00 ~ 15:00	東京都	Tokyo (Shinjuku-ku	0.143
14	3/23 14:00 ~ 15:00	神奈川県	Kanagawa (Chigasa	0.097
15	3/23 14:00 ~ 15:00	新潟県	Niigata (Niigata)	0.047
16	3/23 14:00 ~ 15:00	富山県	Toyama (Imizu)	0.05
17	3/23 14:00 ~ 15:00	石川県	Ishikawa (Kanazawa	0.046
18	3/23 14:00 ~ 15:00	福井県	Fukui (Fukui)	0.045
19	3/23 14:00 ~ 15:00	山梨県	Yamanashi (Kofu)	0.045
20	3/23 14:00 ~ 15:00	長野県	Nagano (Nagano)	0.052
21	3/23 14:00 ~ 15:00	岐阜県	Gifu (Kakamigahara	0.06
22	3/23 14:00 ~ 15:00	静岡県	Shizuoka (Shizuoka	0.05
23	3/23 14:00 ~ 15:00	愛知県	Aichi (Nagoya)	0.039
24	3/23 14:00 ~ 15:00	三重県	Mie (Yokkaichi)	0.045
25	3/23 14:00 ~ 15:00	滋賀県	Shiga (Ohtsu)	0.032
26	3/23 14:00 ~ 15:00	京都府	Kyoto (Kyoto)	0.037
27	3/23 14:00 ~ 15:00	大阪府	Osaka (Osaka)	0.042
28	3/23 14:00 ~ 15:00	兵庫県	Hyogo (Kobe)	0.036
29	3/23 14:00 ~ 15:00	奈良県	Nara (Nara)	0.047
30	3/23 14:00 ~ 15:00	和歌山県	Wakayama (Wakaya	0.031
31	3/23 14:00 ~ 15:00	鳥取県	Tottori (Touhaku-g	0.063
32	3/23 14:00 ~ 15:00	島根県	Shimane (Matsue)	0.036
33	3/23 14:00 ~ 15:00	岡山県	Okayama (Okayama	0.048
34	3/23 14:00 ~ 15:00	広島県	Hiroshima (Hiroshin	0.047
35	3/23 14:00 ~ 15:00	山口県	Yamaguchi (Yamagu	0.09
36	3/23 14:00 ~ 15:00	徳島県	Tokushima (Tokush	0.038
37	3/23 14:00 ~ 15:00	香川県	Kagawa (Takamatsu	0.053
38	3/23 14:00 ~ 15:00	愛媛県	Ehime (Matsuyama)	0.047
39	3/23 14:00 ~ 15:00	高知県	Kochi (Kochi)	0.025
40	3/23 14:00 ~ 15:00	福岡県	Fukuoka (Dazaifu)	0.036
41	3/23 14:00 ~ 15:00	佐賀県	Saga (Saga)	0.039
42	3/23 14:00 ~ 15:00	長崎県	Nagasaki (Ohmura)	0.029
43	3/23 14:00 ~ 15:00	熊本県	Kumamoto (Uto)	0.027
44	3/23 14:00 ~ 15:00	大分県	Oita (Oita)	0.049
45	3/23 14:00 ~ 15:00	宮崎県	Miyazaki (Miyazaki)	0.026
46	3/23 14:00 ~ 15:00	鹿児島県	Kagoshima (Kagosh	0.034
47	3/23 14:00 ~ 15:00	沖縄県	Okinawa (Uruma)	0.021
1	3/23 15:00 ~ 16:00	北海道	Hokkaido (Sapporo)	0.028
2	3/23 15:00 ~ 16:00	青森県	Aomori (Aomori)	0.025
3	3/23 15:00 ~ 16:00	岩手県	Iwate (Morioka)	0.031
4	3/23 15:00 ~ 16:00	宮城県	Miyagi (Sendai)	
5	3/23 15:00 ~ 16:00	秋田県	Akita (Akita)	0.035
6	3/23 15:00 ~ 16:00	山形県	Yamagata (Yamaga	0.084
7	3/23 15:00 ~ 16:00	福島県	Fukushima (Futaba-gun)	
8	3/23 15:00 ~ 16:00	茨城県	Ibaraki (Mito)	0.348
9	3/23 15:00 ~ 16:00	栃木県	Tochigi (Itsunomiya	0.142

10	3/23 15:00 ~ 16:00	群馬県	Gunma (Maebashi)	0.096
11	3/23 15:00 ~ 16:00	埼玉県	Saitama (Saitama)	
12	3/23 15:00 ~ 16:00	千葉県	Chiba (Ichihara)	0.104
13	3/23 15:00 ~ 16:00	東京都	Tokyo (Shinjuku-ku	0.143
14	3/23 15:00 ~ 16:00	神奈川県	Kanagawa (Chigasa	0.097
15	3/23 15:00 ~ 16:00	新潟県	Niigata (Niigata)	0.048
16	3/23 15:00 ~ 16:00	富山県	Toyama (Imizu)	0.049
17	3/23 15:00 ~ 16:00	石川県	Ishikawa (Kanazawa	0.045
18	3/23 15:00 ~ 16:00	福井県	Fukui (Fukui)	0.044
19	3/23 15:00 ~ 16:00	山梨県	Yamanashi (Kofu)	0.046
20	3/23 15:00 ~ 16:00	長野県	Nagano (Nagano)	0.052
21	3/23 15:00 ~ 16:00	岐阜県	Gifu (Kakamigahara	0.06
22	3/23 15:00 ~ 16:00	静岡県	Shizuoka (Shizuoka	0.048
23	3/23 15:00 ~ 16:00	愛知県	Aichi (Nagoya)	0.039
24	3/23 15:00 ~ 16:00	三重県	Mie (Yokkaichi)	0.046
25	3/23 15:00 ~ 16:00	滋賀県	Shiga (Ohtsu)	0.033
26	3/23 15:00 ~ 16:00	京都府	Kyoto (Kyoto)	0.037
27	3/23 15:00 ~ 16:00	大阪府	Osaka (Osaka)	0.042
28	3/23 15:00 ~ 16:00	兵庫県	Hyogo (Kobe)	0.036
29	3/23 15:00 ~ 16:00	奈良県	Nara (Nara)	0.047
30	3/23 15:00 ~ 16:00	和歌山県	Wakayama (Wakaya	0.031
31	3/23 15:00 ~ 16:00	鳥取県	Tottori (Touhaku-g	0.063
32	3/23 15:00 ~ 16:00	島根県	Shimane (Matsue)	0.036
33	3/23 15:00 ~ 16:00	岡山県	Okayama (Okayama	0.048
34	3/23 15:00 ~ 16:00	広島県	Hiroshima (Hiroshin	0.047
35	3/23 15:00 ~ 16:00	山口県	Yamaguchi (Yamagu	0.09
36	3/23 15:00 ~ 16:00	徳島県	Tokushima (Tokush	0.037
37	3/23 15:00 ~ 16:00	香川県	Kagawa (Takamatsu	0.053
38	3/23 15:00 ~ 16:00	愛媛県	Ehime (Matsuyama	0.047
39	3/23 15:00 ~ 16:00	高知県	Kochi (Kochi)	0.025
40	3/23 15:00 ~ 16:00	福岡県	Fukuoka (Dazaifu)	0.036
41	3/23 15:00 ~ 16:00	佐賀県	Saga (Saga)	0.039
42	3/23 15:00 ~ 16:00	長崎県	Nagasaki (Ohmura)	0.029
43	3/23 15:00 ~ 16:00	熊本県	Kumamoto (Uto)	0.027
44	3/23 15:00 ~ 16:00	大分県	Oita (Oita)	0.05
45	3/23 15:00 ~ 16:00	宮崎県	Miyazaki (Miyazaki)	0.026
46	3/23 15:00 ~ 16:00	鹿児島県	Kagoshima (Kagosh	0.034
47	3/23 15:00 ~ 16:00	沖縄県	Okinawa (Uruma)	0.021
1	3/23 16:00 ~ 17:00	北海道	Hokkaido (Sapporo	0.029
2	3/23 16:00 ~ 17:00	青森県	Aomori (Aomori)	0.023
3	3/23 16:00 ~ 17:00	岩手県	Iwate (Morioka)	0.031
4	3/23 16:00 ~ 17:00	宮城県	Miyagi (Sendai)	
5	3/23 16:00 ~ 17:00	秋田県	Akita (Akita)	0.035
6	3/23 16:00 ~ 17:00	山形県	Yamagata (Yamaga	0.084
7	3/23 16:00 ~ 17:00	福島県	Fukushima (Futaba-gun)	
8	3/23 16:00 ~ 17:00	茨城県	Ibaraki (Mito)	0.343
9	3/23 16:00 ~ 17:00	栃木県	Tochigi (Itsunomiya	0.141
10	3/23 16:00 ~ 17:00	群馬県	Gunma (Maebashi)	0.096
11	3/23 16:00 ~ 17:00	埼玉県	Saitama (Saitama)	
12	3/23 16:00 ~ 17:00	千葉県	Chiba (Ichihara)	0.104
13	3/23 16:00 ~ 17:00	東京都	Tokyo (Shinjuku-ku	0.146
14	3/23 16:00 ~ 17:00	神奈川県	Kanagawa (Chigasa	0.097
15	3/23 16:00 ~ 17:00	新潟県	Niigata (Niigata)	0.048
16	3/23 16:00 ~ 17:00	富山県	Toyama (Imizu)	0.048
17	3/23 16:00 ~ 17:00	石川県	Ishikawa (Kanazawa	0.046
18	3/23 16:00 ~ 17:00	福井県	Fukui (Fukui)	0.044
19	3/23 16:00 ~ 17:00	山梨県	Yamanashi (Kofu)	0.047

20	3/23 16:00 ~ 17:00	長野県	Nagano (Nagano)	0.052
21	3/23 16:00 ~ 17:00	岐阜県	Gifu (Kakamigahara	0.06
22	3/23 16:00 ~ 17:00	静岡県	Shizuoka (Shizuoka	0.048
23	3/23 16:00 ~ 17:00	愛知県	Aichi (Nagoya)	0.039
24	3/23 16:00 ~ 17:00	三重県	Mie (Yokkaichi)	0.046
25	3/23 16:00 ~ 17:00	滋賀県	Shiga (Ohtsu)	0.033
26	3/23 16:00 ~ 17:00	京都府	Kyoto (Kyoto)	0.037
27	3/23 16:00 ~ 17:00	大阪府	Osaka (Osaka)	0.042
28	3/23 16:00 ~ 17:00	兵庫県	Hyogo (Kobe)	0.036
29	3/23 16:00 ~ 17:00	奈良県	Nara (Nara)	0.047
30	3/23 16:00 ~ 17:00	和歌山県	Wakayama (Wakaya	0.031
31	3/23 16:00 ~ 17:00	鳥取県	Tottori (Touhaku-g	0.063
32	3/23 16:00 ~ 17:00	島根県	Shimane (Matsue)	0.036
33	3/23 16:00 ~ 17:00	岡山県	Okayama (Okayama	0.048
34	3/23 16:00 ~ 17:00	広島県	Hiroshima (Hiroshin	0.047
35	3/23 16:00 ~ 17:00	山口県	Yamaguchi (Yamagı	0.09
36	3/23 16:00 ~ 17:00	徳島県	Tokushima (Tokush	0.038
37	3/23 16:00 ~ 17:00	香川県	Kagawa (Takamatsı	0.052
38	3/23 16:00 ~ 17:00	愛媛県	Ehime (Matsuyama	0.047
39	3/23 16:00 ~ 17:00	高知県	Kochi (Kochi)	0.025
40	3/23 16:00 ~ 17:00	福岡県	Fukuoka (Dazaifu)	0.036
41	3/23 16:00 ~ 17:00	佐賀県	Saga (Saga)	0.039
42	3/23 16:00 ~ 17:00	長崎県	Nagasaki (Ohmura)	0.029
43	3/23 16:00 ~ 17:00	熊本県	Kumamoto (Uto)	0.026
44	3/23 16:00 ~ 17:00	大分県	Oita (Oita)	0.049
45	3/23 16:00 ~ 17:00	宮崎県	Miyazaki (Miyazaki)	0.026
46	3/23 16:00 ~ 17:00	鹿児島県	Kagoshima (Kagosh	0.034
47	3/23 16:00 ~ 17:00	沖縄県	Okinawa (Uruma)	0.021
1	3/23 17:00 ~ 18:00	北海道	Hokkaido (Sapporo	0.03
2	3/22 17:00 ~ 18:00	青森県	Aomori (Aomori)	0.024
3	3/22 17:00 ~ 18:00	岩手県	Iwate (Morioka)	0.031
4	3/22 17:00 ~ 18:00	宮城県	Miyagi (Sendai)	
5	3/22 17:00 ~ 18:00	秋田県	Akita (Akita)	0.035
6	3/22 17:00 ~ 18:00	山形県	Yamagata (Yamaga	0.084
7	3/22 17:00 ~ 18:00	福島県	Fukushima (Futaba-gun)	
8	3/22 17:00 ~ 18:00	茨城県	Ibaraki (Mito)	0.338
9	3/22 17:00 ~ 18:00	栃木県	Tochigi (Itsunomiya	0.14
10	3/22 17:00 ~ 18:00	群馬県	Gunma (Maebashi)	0.095
11	3/22 17:00 ~ 18:00	埼玉県	Saitama (Saitama)	
12	3/22 17:00 ~ 18:00	千葉県	Chiba (Ichihara)	0.106
13	3/22 17:00 ~ 18:00	東京都	Tokyo (Shinjuku-kı	0.145
14	3/22 17:00 ~ 18:00	神奈川県	Kanagawa (Chigasa	0.098
15	3/22 17:00 ~ 18:00	新潟県	Niigata (Niigata)	0.047
16	3/22 17:00 ~ 18:00	富山県	Toyama (Imizu)	0.047
17	3/22 17:00 ~ 18:00	石川県	Ishikawa (Kanazawa	0.046
18	3/22 17:00 ~ 18:00	福井県	Fukui (Fukui)	0.045
19	3/22 17:00 ~ 18:00	山梨県	Yamanashi (Kofu)	0.055
20	3/22 17:00 ~ 18:00	長野県	Nagano (Nagano)	0.052
21	3/22 17:00 ~ 18:00	岐阜県	Gifu (Kakamigahara	0.06
22	3/22 17:00 ~ 18:00	静岡県	Shizuoka (Shizuoka	0.048
23	3/22 17:00 ~ 18:00	愛知県	Aichi (Nagoya)	0.039
24	3/22 17:00 ~ 18:00	三重県	Mie (Yokkaichi)	0.045
25	3/22 17:00 ~ 18:00	滋賀県	Shiga (Ohtsu)	0.032
26	3/22 17:00 ~ 18:00	京都府	Kyoto (Kyoto)	0.038
27	3/22 17:00 ~ 18:00	大阪府	Osaka (Osaka)	0.042
28	3/22 17:00 ~ 18:00	兵庫県	Hyogo (Kobe)	0.036
29	3/22 17:00 ~ 18:00	奈良県	Nara (Nara)	0.047

30	3/22 17:00 ~ 18:00	和歌山県	Wakayama (Wakaya	0.031
31	3/22 17:00 ~ 18:00	鳥取県	Tottori (Touhaku-g	0.063
32	3/22 17:00 ~ 18:00	島根県	Shimane (Matsue)	0.036
33	3/22 17:00 ~ 18:00	岡山県	Okayama (Okayama	0.049
34	3/22 17:00 ~ 18:00	広島県	Hiroshima (Hiroshin	0.046
35	3/22 17:00 ~ 18:00	山口県	Yamaguchi (Yamagı	0.09
36	3/22 17:00 ~ 18:00	徳島県	Tokushima (Tokush	0.037
37	3/22 17:00 ~ 18:00	香川県	Kagawa (Takamatsı	0.052
38	3/22 17:00 ~ 18:00	愛媛県	Ehime (Matsuyama	0.047
39	3/22 17:00 ~ 18:00	高知県	Kochi (Kochi)	0.025
40	3/22 17:00 ~ 18:00	福岡県	Fukuoka (Dazaifu)	0.036
41	3/22 17:00 ~ 18:00	佐賀県	Saga (Saga)	0.039
42	3/22 17:00 ~ 18:00	長崎県	Nagasaki (Ohmura)	0.029
43	3/22 17:00 ~ 18:00	熊本県	Kumamoto (Uto)	0.026
44	3/22 17:00 ~ 18:00	大分県	Oita (Oita)	0.049
45	3/22 17:00 ~ 18:00	宮崎県	Miyazaki (Miyazaki)	0.026
46	3/22 17:00 ~ 18:00	鹿児島県	Kagoshima (Kagosh	0.034
47	3/22 17:00 ~ 18:00	沖縄県	Okinawa (Uruma)	0.021
1	3/22 18:00 ~ 19:00	北海道	Hokkaido (Sapporo)	0.031
2	3/22 18:00 ~ 19:00	青森県	Aomori (Aomori)	0.025
3	3/22 18:00 ~ 19:00	岩手県	Iwate (Morioka)	0.031
4	3/22 18:00 ~ 19:00	宮城県	Miyagi (Sendai)	
5	3/22 18:00 ~ 19:00	秋田県	Akita (Akita)	0.035
6	3/22 18:00 ~ 19:00	山形県	Yamagata (Yamaga	0.084
7	3/22 18:00 ~ 19:00	福島県	Fukushima (Futaba-gun)	
8	3/22 18:00 ~ 19:00	茨城県	Ibaraki (Mito)	0.329
9	3/22 18:00 ~ 19:00	栃木県	Tochigi (Itsunomiya	0.14
10	3/22 18:00 ~ 19:00	群馬県	Gunma (Maebashi)	0.096
11	3/22 18:00 ~ 19:00	埼玉県	Saitama (Saitama)	0.123
12	3/22 18:00 ~ 19:00	千葉県	Chiba (Ichihara)	0.109
13	3/22 18:00 ~ 19:00	東京都	Tokyo (Shinjuku-kı	0.144
14	3/22 18:00 ~ 19:00	神奈川県	Kanagawa (Chigasa	0.098
15	3/22 18:00 ~ 19:00	新潟県	Niigata (Niigata)	0.047
16	3/22 18:00 ~ 19:00	富山県	Toyama (Imizu)	0.047
17	3/22 18:00 ~ 19:00	石川県	Ishikawa (Kanazawa	0.047
18	3/22 18:00 ~ 19:00	福井県	Fukui (Fukui)	0.045
19	3/22 18:00 ~ 19:00	山梨県	Yamanashi (Kofu)	0.065
20	3/22 18:00 ~ 19:00	長野県	Nagano (Nagano)	0.052
21	3/22 18:00 ~ 19:00	岐阜県	Gifu (Kakamigahara	0.06
22	3/22 18:00 ~ 19:00	静岡県	Shizuoka (Shizuoka	0.048
23	3/22 18:00 ~ 19:00	愛知県	Aichi (Nagoya)	0.039
24	3/22 18:00 ~ 19:00	三重県	Mie (Yokkaichi)	0.046
25	3/22 18:00 ~ 19:00	滋賀県	Shiga (Ohtsu)	0.032
26	3/22 18:00 ~ 19:00	京都府	Kyoto (Kyoto)	0.038
27	3/22 18:00 ~ 19:00	大阪府	Osaka (Osaka)	0.042
28	3/22 18:00 ~ 19:00	兵庫県	Hyogo (Kobe)	0.036
29	3/22 18:00 ~ 19:00	奈良県	Nara (Nara)	0.047
30	3/22 18:00 ~ 19:00	和歌山県	Wakayama (Wakaya	0.031
31	3/22 18:00 ~ 19:00	鳥取県	Tottori (Touhaku-g	0.063
32	3/22 18:00 ~ 19:00	島根県	Shimane (Matsue)	0.036
33	3/22 18:00 ~ 19:00	岡山県	Okayama (Okayama	0.051
34	3/22 18:00 ~ 19:00	広島県	Hiroshima (Hiroshin	0.046
35	3/22 18:00 ~ 19:00	山口県	Yamaguchi (Yamagı	0.091
36	3/22 18:00 ~ 19:00	徳島県	Tokushima (Tokush	0.038
37	3/22 18:00 ~ 19:00	香川県	Kagawa (Takamatsı	0.052
38	3/22 18:00 ~ 19:00	愛媛県	Ehime (Matsuyama	0.047
39	3/22 18:00 ~ 19:00	高知県	Kochi (Kochi)	0.025

40	3/22 18:00 ~ 19:00	福岡県	Fukuoka (Dazaifu)	0.036
41	3/22 18:00 ~ 19:00	佐賀県	Saga (Saga)	0.039
42	3/22 18:00 ~ 19:00	長崎県	Nagasaki (Ohmura)	0.028
43	3/22 18:00 ~ 19:00	熊本県	Kumamoto (Uto)	0.027
44	3/22 18:00 ~ 19:00	大分県	Oita (Oita)	0.049
45	3/22 18:00 ~ 19:00	宮崎県	Miyazaki (Miyazaki)	0.026
46	3/22 18:00 ~ 19:00	鹿児島県	Kagoshima (Kagosh	0.034
47	3/22 18:00 ~ 19:00	沖縄県	Okinawa (Uruma)	0.021
1	3/22 19:00 ~ 20:00	北海道	Hokkaido (Sapporo	0.029
2	3/22 19:00 ~ 20:00	青森県	Aomori (Aomori)	0.029
3	3/22 19:00 ~ 20:00	岩手県	Iwate (Morioka)	0.032
4	3/22 19:00 ~ 20:00	宮城県	Miyagi (Sendai)	
5	3/22 19:00 ~ 20:00	秋田県	Akita (Akita)	0.035
6	3/22 19:00 ~ 20:00	山形県	Yamagata (Yamaga	0.084
7	3/22 19:00 ~ 20:00	福島県	Fukushima (Futaba-gun)	
8	3/22 19:00 ~ 20:00	茨城県	Ibaraki (Mito)	0.327
9	3/22 19:00 ~ 20:00	栃木県	Tochigi (Itsunomiya	0.14
10	3/22 19:00 ~ 20:00	群馬県	Gunma (Maebashi)	0.096
11	3/22 19:00 ~ 20:00	埼玉県	Saitama (Saitama)	0.125
12	3/22 19:00 ~ 20:00	千葉県	Chiba (Ichihara)	0.108
13	3/22 19:00 ~ 20:00	東京都	Tokyo (Shinjuku-ku	0.147
14	3/22 19:00 ~ 20:00	神奈川県	Kanagawa (Chigasa	0.098
15	3/22 19:00 ~ 20:00	新潟県	Niigata (Niigata)	0.047
16	3/22 19:00 ~ 20:00	富山県	Toyama (Imizu)	0.047
17	3/22 19:00 ~ 20:00	石川県	Ishikawa (Kanazawa	0.047
18	3/22 19:00 ~ 20:00	福井県	Fukui (Fukui)	0.045
19	3/22 19:00 ~ 20:00	山梨県	Yamanashi (Kofu)	0.063
20	3/22 19:00 ~ 20:00	長野県	Nagano (Nagano)	0.052
21	3/22 19:00 ~ 20:00	岐阜県	Gifu (Kakamigahara	0.06
22	3/22 19:00 ~ 20:00	静岡県	Shizuoka (Shizuoka	0.048
23	3/22 19:00 ~ 20:00	愛知県	Aichi (Nagoya)	0.039
24	3/22 19:00 ~ 20:00	三重県	Mie (Yokkaichi)	0.046
25	3/22 19:00 ~ 20:00	滋賀県	Shiga (Ohtsu)	0.032
26	3/22 19:00 ~ 20:00	京都府	Kyoto (Kyoto)	0.037
27	3/22 19:00 ~ 20:00	大阪府	Osaka (Osaka)	0.042
28	3/22 19:00 ~ 20:00	兵庫県	Hyogo (Kobe)	0.036
29	3/22 19:00 ~ 20:00	奈良県	Nara (Nara)	0.047
30	3/22 19:00 ~ 20:00	和歌山県	Wakayama (Wakaya	0.031
31	3/22 19:00 ~ 20:00	鳥取県	Tottori (Touhaku-g	0.063
32	3/22 19:00 ~ 20:00	島根県	Shimane (Matsue)	0.036
33	3/22 19:00 ~ 20:00	岡山県	Okayama (Okayama	0.05
34	3/22 19:00 ~ 20:00	広島県	Hiroshima (Hiroshin	0.046
35	3/22 19:00 ~ 20:00	山口県	Yamaguchi (Yamagu	0.09
36	3/22 19:00 ~ 20:00	徳島県	Tokushima (Tokush	0.038
37	3/22 19:00 ~ 20:00	香川県	Kagawa (Takamatsu	0.053
38	3/22 19:00 ~ 20:00	愛媛県	Ehime (Matsuyama	0.047
39	3/22 19:00 ~ 20:00	高知県	Kochi (Kochi)	0.025
40	3/22 19:00 ~ 20:00	福岡県	Fukuoka (Dazaifu)	0.036
41	3/22 19:00 ~ 20:00	佐賀県	Saga (Saga)	0.04
42	3/22 19:00 ~ 20:00	長崎県	Nagasaki (Ohmura)	0.029
43	3/22 19:00 ~ 20:00	熊本県	Kumamoto (Uto)	0.026
44	3/22 19:00 ~ 20:00	大分県	Oita (Oita)	0.049
45	3/22 19:00 ~ 20:00	宮崎県	Miyazaki (Miyazaki)	0.026
46	3/22 19:00 ~ 20:00	鹿児島県	Kagoshima (Kagosh	0.034
47	3/22 19:00 ~ 20:00	沖縄県	Okinawa (Uruma)	0.021
1	3/22 20:00 ~ 21:00	北海道	Hokkaido (Sapporo	0.029
2	3/22 20:00 ~ 21:00	青森県	Aomori (Aomori)	0.029

3	3/22 20:00 ~ 21:00	岩手県	Iwate (Morioka)	0.031
4	3/22 20:00 ~ 21:00	宮城県	Miyagi (Sendai)	
5	3/22 20:00 ~ 21:00	秋田県	Akita (Akita)	0.036
6	3/22 20:00 ~ 21:00	山形県	Yamagata (Yamaga	0.084
7	3/22 20:00 ~ 21:00	福島県	Fukushima (Futaba-gun)	
8	3/22 20:00 ~ 21:00	茨城県	Ibaraki (Mito)	0.324
9	3/22 20:00 ~ 21:00	栃木県	Tochigi (Itsunomiya	0.14
10	3/22 20:00 ~ 21:00	群馬県	Gunma (Maebashi)	0.096
11	3/22 20:00 ~ 21:00	埼玉県	Saitama (Saitama)	0.127
12	3/22 20:00 ~ 21:00	千葉県	Chiba (Ichihara)	0.109
13	3/22 20:00 ~ 21:00	東京都	Tokyo (Shinjuku-ku	0.148
14	3/22 20:00 ~ 21:00	神奈川県	Kanagawa (Chigasa	0.098
15	3/22 20:00 ~ 21:00	新潟県	Niigata (Niigata)	0.047
16	3/22 20:00 ~ 21:00	富山県	Toyama (Imizu)	0.047
17	3/22 20:00 ~ 21:00	石川県	Ishikawa (Kanazawa	0.047
18	3/22 20:00 ~ 21:00	福井県	Fukui (Fukui)	0.045
19	3/22 20:00 ~ 21:00	山梨県	Yamanashi (Kofu)	0.057
20	3/22 20:00 ~ 21:00	長野県	Nagano (Nagano)	0.052
21	3/22 20:00 ~ 21:00	岐阜県	Gifu (Kakamigahara	0.06
22	3/22 20:00 ~ 21:00	静岡県	Shizuoka (Shizuoka	0.047
23	3/22 20:00 ~ 21:00	愛知県	Aichi (Nagoya)	0.039
24	3/22 20:00 ~ 21:00	三重県	Mie (Yokkaichi)	0.046
25	3/22 20:00 ~ 21:00	滋賀県	Shiga (Ohtsu)	0.033
26	3/22 20:00 ~ 21:00	京都府	Kyoto (Kyoto)	0.038
27	3/22 20:00 ~ 21:00	大阪府	Osaka (Osaka)	0.042
28	3/22 20:00 ~ 21:00	兵庫県	Hyogo (Kobe)	0.037
29	3/22 20:00 ~ 21:00	奈良県	Nara (Nara)	0.047
30	3/22 20:00 ~ 21:00	和歌山県	Wakayama (Wakaya	0.031
31	3/22 20:00 ~ 21:00	鳥取県	Tottori (Touhaku-g	0.063
32	3/22 20:00 ~ 21:00	島根県	Shimane (Matsue)	0.037
33	3/22 20:00 ~ 21:00	岡山県	Okayama (Okayama	0.049
34	3/22 20:00 ~ 21:00	広島県	Hiroshima (Hiroshin	0.046
35	3/22 20:00 ~ 21:00	山口県	Yamaguchi (Yamagu	0.091
36	3/22 20:00 ~ 21:00	徳島県	Tokushima (Tokush	0.038
37	3/22 20:00 ~ 21:00	香川県	Kagawa (Takamatsu	0.052
38	3/22 20:00 ~ 21:00	愛媛県	Ehime (Matsuyama)	0.048
39	3/22 20:00 ~ 21:00	高知県	Kochi (Kochi)	0.025
40	3/22 20:00 ~ 21:00	福岡県	Fukuoka (Dazaifu)	0.036
41	3/22 20:00 ~ 21:00	佐賀県	Saga (Saga)	0.04
42	3/22 20:00 ~ 21:00	長崎県	Nagasaki (Ohmura)	0.029
43	3/22 20:00 ~ 21:00	熊本県	Kumamoto (Uto)	0.026
44	3/22 20:00 ~ 21:00	大分県	Oita (Oita)	0.049
45	3/22 20:00 ~ 21:00	宮崎県	Miyazaki (Miyazaki)	0.026
46	3/22 20:00 ~ 21:00	鹿児島県	Kagoshima (Kagosh	0.034
47	3/22 20:00 ~ 21:00	沖縄県	Okinawa (Uruma)	0.021
1	3/22 21:00 ~ 22:00	北海道	Hokkaido (Sapporo)	0.029
2	3/22 21:00 ~ 22:00	青森県	Aomori (Aomori)	0.026
3	3/22 21:00 ~ 22:00	岩手県	Iwate (Morioka)	0.031
4	3/22 21:00 ~ 22:00	宮城県	Miyagi (Sendai)	
5	3/22 21:00 ~ 22:00	秋田県	Akita (Akita)	0.037
6	3/22 21:00 ~ 22:00	山形県	Yamagata (Yamaga	0.084
7	3/22 21:00 ~ 22:00	福島県	Fukushima (Futaba-gun)	
8	3/22 21:00 ~ 22:00	茨城県	Ibaraki (Mito)	0.322
9	3/22 21:00 ~ 22:00	栃木県	Tochigi (Itsunomiya	0.139
10	3/22 21:00 ~ 22:00	群馬県	Gunma (Maebashi)	0.096
11	3/22 21:00 ~ 22:00	埼玉県	Saitama (Saitama)	0.137
12	3/22 21:00 ~ 22:00	千葉県	Chiba (Ichihara)	0.107

13	3/22 21:00 ~ 22:00	東京都	Tokyo (Shinjuku-ku	0.146
14	3/22 21:00 ~ 22:00	神奈川県	Kanagawa (Chigasa	0.1
15	3/22 21:00 ~ 22:00	新潟県	Niigata (Niigata)	0.047
16	3/22 21:00 ~ 22:00	富山県	Toyama (Imizu)	0.048
17	3/22 21:00 ~ 22:00	石川県	Ishikawa (Kanazawa	0.047
18	3/22 21:00 ~ 22:00	福井県	Fukui (Fukui)	0.045
19	3/22 21:00 ~ 22:00	山梨県	Yamanashi (Kofu)	0.05
20	3/22 21:00 ~ 22:00	長野県	Nagano (Nagano)	0.052
21	3/22 21:00 ~ 22:00	岐阜県	Gifu (Kakamigahara	0.06
22	3/22 21:00 ~ 22:00	静岡県	Shizuoka (Shizuoka	0.047
23	3/22 21:00 ~ 22:00	愛知県	Aichi (Nagoya)	0.039
24	3/22 21:00 ~ 22:00	三重県	Mie (Yokkaichi)	0.046
25	3/22 21:00 ~ 22:00	滋賀県	Shiga (Ohtsu)	0.032
26	3/22 21:00 ~ 22:00	京都府	Kyoto (Kyoto)	0.038
27	3/22 21:00 ~ 22:00	大阪府	Osaka (Osaka)	0.042
28	3/22 21:00 ~ 22:00	兵庫県	Hyogo (Kobe)	0.036
29	3/22 21:00 ~ 22:00	奈良県	Nara (Nara)	0.047
30	3/22 21:00 ~ 22:00	和歌山県	Wakayama (Wakaya	0.031
31	3/22 21:00 ~ 22:00	鳥取県	Tottori (Touhaku-g	0.064
32	3/22 21:00 ~ 22:00	島根県	Shimane (Matsue)	0.038
33	3/22 21:00 ~ 22:00	岡山県	Okayama (Okayama	0.049
34	3/22 21:00 ~ 22:00	広島県	Hiroshima (Hiroshin	0.046
35	3/22 21:00 ~ 22:00	山口県	Yamaguchi (Yamagu	0.091
36	3/22 21:00 ~ 22:00	徳島県	Tokushima (Tokush	0.038
37	3/22 21:00 ~ 22:00	香川県	Kagawa (Takamatsu	0.053
38	3/22 21:00 ~ 22:00	愛媛県	Ehime (Matsuyama)	0.048
39	3/22 21:00 ~ 22:00	高知県	Kochi (Kochi)	0.025
40	3/22 21:00 ~ 22:00	福岡県	Fukuoka (Dazaifu)	0.036
41	3/22 21:00 ~ 22:00	佐賀県	Saga (Saga)	0.04
42	3/22 21:00 ~ 22:00	長崎県	Nagasaki (Ohmura)	0.029
43	3/22 21:00 ~ 22:00	熊本県	Kumamoto (Uto)	0.026
44	3/22 21:00 ~ 22:00	大分県	Oita (Oita)	0.05
45	3/22 21:00 ~ 22:00	宮崎県	Miyazaki (Miyazaki)	0.026
46	3/22 21:00 ~ 22:00	鹿児島県	Kagoshima (Kagosh	0.034
47	3/22 21:00 ~ 22:00	沖縄県	Okinawa (Uruma)	0.021
1	3/22 22:00 ~ 23:00	北海道	Hokkaido (Sapporo)	0.028
2	3/22 22:00 ~ 23:00	青森県	Aomori (Aomori)	0.025
3	3/22 22:00 ~ 23:00	岩手県	Iwate (Morioka)	0.031
4	3/22 22:00 ~ 23:00	宮城県	Miyagi (Sendai)	
5	3/22 22:00 ~ 23:00	秋田県	Akita (Akita)	0.038
6	3/22 22:00 ~ 23:00	山形県	Yamagata (Yamaga	0.085
7	3/22 22:00 ~ 23:00	福島県	Fukushima (Futaba-gun)	
8	3/22 22:00 ~ 23:00	茨城県	Ibaraki (Mito)	0.319
9	3/22 22:00 ~ 23:00	栃木県	Tochigi (Itsunomiya	0.139
10	3/22 22:00 ~ 23:00	群馬県	Gunma (Maebashi)	0.095
11	3/22 22:00 ~ 23:00	埼玉県	Saitama (Saitama)	0.128
12	3/22 22:00 ~ 23:00	千葉県	Chiba (Ichihara)	0.104
13	3/22 22:00 ~ 23:00	東京都	Tokyo (Shinjuku-ku	0.143
14	3/22 22:00 ~ 23:00	神奈川県	Kanagawa (Chigasa	0.099
15	3/22 22:00 ~ 23:00	新潟県	Niigata (Niigata)	0.047
16	3/22 22:00 ~ 23:00	富山県	Toyama (Imizu)	0.048
17	3/22 22:00 ~ 23:00	石川県	Ishikawa (Kanazawa	0.047
18	3/22 22:00 ~ 23:00	福井県	Fukui (Fukui)	0.046
19	3/22 22:00 ~ 23:00	山梨県	Yamanashi (Kofu)	0.047
20	3/22 22:00 ~ 23:00	長野県	Nagano (Nagano)	0.052
21	3/22 22:00 ~ 23:00	岐阜県	Gifu (Kakamigahara	0.06
22	3/22 22:00 ~ 23:00	静岡県	Shizuoka (Shizuoka	0.047

23	3/22 22:00 ~ 23:00	愛知県	Aichi (Nagoya)	0.039
24	3/22 22:00 ~ 23:00	三重県	Mie (Yokkaichi)	0.046
25	3/22 22:00 ~ 23:00	滋賀県	Shiga (Ohtsu)	0.033
26	3/22 22:00 ~ 23:00	京都府	Kyoto (Kyoto)	0.038
27	3/22 22:00 ~ 23:00	大阪府	Osaka (Osaka)	0.042
28	3/22 22:00 ~ 23:00	兵庫県	Hyogo (Kobe)	0.036
29	3/22 22:00 ~ 23:00	奈良県	Nara (Nara)	0.048
30	3/22 22:00 ~ 23:00	和歌山県	Wakayama (Wakaya	0.032
31	3/22 22:00 ~ 23:00	鳥取県	Tottori (Touhaku-g	0.063
32	3/22 22:00 ~ 23:00	島根県	Shimane (Matsue)	0.038
33	3/22 22:00 ~ 23:00	岡山県	Okayama (Okayama	0.048
34	3/22 22:00 ~ 23:00	広島県	Hiroshima (Hiroshin	0.047
35	3/22 22:00 ~ 23:00	山口県	Yamaguchi (Yamagı	0.092
36	3/22 22:00 ~ 23:00	徳島県	Tokushima (Tokush	0.038
37	3/22 22:00 ~ 23:00	香川県	Kagawa (Takamatsı	0.055
38	3/22 22:00 ~ 23:00	愛媛県	Ehime (Matsuyama	0.048
39	3/22 22:00 ~ 23:00	高知県	Kochi (Kochi)	0.025
40	3/22 22:00 ~ 23:00	福岡県	Fukuoka (Dazaifu)	0.036
41	3/22 22:00 ~ 23:00	佐賀県	Saga (Saga)	0.04
42	3/22 22:00 ~ 23:00	長崎県	Nagasaki (Ohmura)	0.029
43	3/22 22:00 ~ 23:00	熊本県	Kumamoto (Uto)	0.027
44	3/22 22:00 ~ 23:00	大分県	Oita (Oita)	0.049
45	3/22 22:00 ~ 23:00	宮崎県	Miyazaki (Miyazaki)	0.027
46	3/22 22:00 ~ 23:00	鹿児島県	Kagoshima (Kagosh	0.035
47	3/22 22:00 ~ 23:00	沖縄県	Okinawa (Uruma)	0.021
1	3/22 23:00 ~ 24:00	北海道	Hokkaido (Sapporo)	0.028
2	3/22 23:00 ~ 24:00	青森県	Aomori (Aomori)	0.025
3	3/22 23:00 ~ 24:00	岩手県	Iwate (Morioka)	0.032
4	3/22 23:00 ~ 24:00	宮城県	Miyagi (Sendai)	
5	3/22 23:00 ~ 24:00	秋田県	Akita (Akita)	0.038
6	3/22 23:00 ~ 24:00	山形県	Yamagata (Yamaga	0.085
7	3/22 23:00 ~ 24:00	福島県	Fukushima (Futaba-gun)	
8	3/22 23:00 ~ 24:00	茨城県	Ibaraki (Mito)	0.318
9	3/22 23:00 ~ 24:00	栃木県	Tochigi (Itsunomiya	0.138
10	3/22 23:00 ~ 24:00	群馬県	Gunma (Maebashi)	0.096
11	3/22 23:00 ~ 24:00	埼玉県	Saitama (Saitama)	0.122
12	3/22 23:00 ~ 24:00	千葉県	Chiba (Ichihara)	0.102
13	3/22 23:00 ~ 24:00	東京都	Tokyo (Shinjuku-kı	0.141
14	3/22 23:00 ~ 24:00	神奈川県	Kanagawa (Chigasa	0.098
15	3/22 23:00 ~ 24:00	新潟県	Niigata (Niigata)	0.046
16	3/22 23:00 ~ 24:00	富山県	Toyama (Imizu)	0.048
17	3/22 23:00 ~ 24:00	石川県	Ishikawa (Kanazawa	0.048
18	3/22 23:00 ~ 24:00	福井県	Fukui (Fukui)	0.046
19	3/22 23:00 ~ 24:00	山梨県	Yamanashi (Kofu)	0.046
20	3/22 23:00 ~ 24:00	長野県	Nagano (Nagano)	0.052
21	3/22 23:00 ~ 24:00	岐阜県	Gifu (Kakamigahara	0.06
22	3/22 23:00 ~ 24:00	静岡県	Shizuoka (Shizuoka	0.048
23	3/22 23:00 ~ 24:00	愛知県	Aichi (Nagoya)	0.039
24	3/22 23:00 ~ 24:00	三重県	Mie (Yokkaichi)	0.046
25	3/22 23:00 ~ 24:00	滋賀県	Shiga (Ohtsu)	0.033
26	3/22 23:00 ~ 24:00	京都府	Kyoto (Kyoto)	0.038
27	3/22 23:00 ~ 24:00	大阪府	Osaka (Osaka)	0.043
28	3/22 23:00 ~ 24:00	兵庫県	Hyogo (Kobe)	0.037
29	3/22 23:00 ~ 24:00	奈良県	Nara (Nara)	0.048
30	3/22 23:00 ~ 24:00	和歌山県	Wakayama (Wakaya	0.032
31	3/22 23:00 ~ 24:00	鳥取県	Tottori (Touhaku-g	0.065
32	3/22 23:00 ~ 24:00	島根県	Shimane (Matsue)	0.038

33	3/22 23:00 ˜ 24:00	岡山県	Okayama (Okayama	0.049
34	3/22 23:00 ˜ 24:00	広島県	Hiroshima (Hiroshin	0.047
35	3/22 23:00 ˜ 24:00	山口県	Yamaguchi (Yamagı	0.092
36	3/22 23:00 ˜ 24:00	徳島県	Tokushima (Tokusł	0.038
37	3/22 23:00 ˜ 24:00	香川県	Kagawa (Takamatsı	0.056
38	3/22 23:00 ˜ 24:00	愛媛県	Ehime (Matsuyama	0.048
39	3/22 23:00 ˜ 24:00	高知県	Kochi (Kochi)	0.026
40	3/22 23:00 ˜ 24:00	福岡県	Fukuoka (Dazaifu)	0.036
41	3/22 23:00 ˜ 24:00	佐賀県	Saga (Saga)	0.04
42	3/22 23:00 ˜ 24:00	長崎県	Nagasaki (Ohmura)	0.029
43	3/22 23:00 ˜ 24:00	熊本県	Kumamoto (Uto)	0.027
44	3/22 23:00 ˜ 24:00	大分県	Oita (Oita)	0.049
45	3/22 23:00 ˜ 24:00	宮崎県	Miyazaki (Miyazaki)	0.027
46	3/22 23:00 ˜ 24:00	鹿児島県	Kagoshima (Kagosh	0.035
47	3/22 23:00 ˜ 24:00	沖縄県	Okinawa (Uruma)	0.021
1	3/24 00:00 ˜ 01:00	北海道	Hokkaido (Sapporo	0.028
2	3/24 00:00 ˜ 01:00	青森県	Aomori (Aomori)	0.026
3	3/24 00:00 ˜ 01:00	岩手県	Iwate (Morioka)	0.032
4	3/24 00:00 ˜ 01:00	宮城県	Miyagi (Sendai)	
5	3/24 00:00 ˜ 01:00	秋田県	Akita (Akita)	0.036
6	3/24 00:00 ˜ 01:00	山形県	Yamagata (Yamaga	0.085
7	3/24 00:00 ˜ 01:00	福島県	Fukushima (Futaba-gun)	
8	3/24 00:00 ˜ 01:00	茨城県	Ibaraki (Mito)	0.317
9	3/24 00:00 ˜ 01:00	栃木県	Tochigi (Itsunomiya	0.138
10	3/24 00:00 ˜ 01:00	群馬県	Gunma (Maebashi)	0.095
11	3/24 00:00 ˜ 01:00	埼玉県	Saitama (Saitama)	0.12
12	3/24 00:00 ˜ 01:00	千葉県	Chiba (Ichihara)	0.101
13	3/24 00:00 ˜ 01:00	東京都	Tokyo (Shinjuku-kı	0.14
14	3/24 00:00 ˜ 01:00	神奈川県	Kanagawa (Chigasa	0.097
15	3/24 00:00 ˜ 01:00	新潟県	Niigata (Niigata)	0.046
16	3/24 00:00 ˜ 01:00	富山県	Toyama (Imizu)	0.048
17	3/24 00:00 ˜ 01:00	石川県	Ishikawa (Kanazawa	0.048
18	3/24 00:00 ˜ 01:00	福井県	Fukui (Fukui)	0.046
19	3/24 00:00 ˜ 01:00	山梨県	Yamanashi (Kofu)	0.045
20	3/24 00:00 ˜ 01:00	長野県	Nagano (Nagano)	0.052
21	3/24 00:00 ˜ 01:00	岐阜県	Gifu (Kakamigahara	0.061
22	3/24 00:00 ˜ 01:00	静岡県	Shizuoka (Shizuoka	0.047
23	3/24 00:00 ˜ 01:00	愛知県	Aichi (Nagoya)	0.039
24	3/24 00:00 ˜ 01:00	三重県	Mie (Yokkaichi)	0.046
25	3/24 00:00 ˜ 01:00	滋賀県	Shiga (Ohtsu)	0.034
26	3/24 00:00 ˜ 01:00	京都府	Kyoto (Kyoto)	0.039
27	3/24 00:00 ˜ 01:00	大阪府	Osaka (Osaka)	0.043
28	3/24 00:00 ˜ 01:00	兵庫県	Hyogo (Kobe)	0.037
29	3/24 00:00 ˜ 01:00	奈良県	Nara (Nara)	0.048
30	3/24 00:00 ˜ 01:00	和歌山県	Wakayama (Wakaya	0.032
31	3/24 00:00 ˜ 01:00	鳥取県	Tottori (Touhaku-g	0.068
32	3/24 00:00 ˜ 01:00	島根県	Shimane (Matsue)	0.037
33	3/24 00:00 ˜ 01:00	岡山県	Okayama (Okayama	0.049
34	3/24 00:00 ˜ 01:00	広島県	Hiroshima (Hiroshin	0.047
35	3/24 00:00 ˜ 01:00	山口県	Yamaguchi (Yamagı	0.094
36	3/24 00:00 ˜ 01:00	徳島県	Tokushima (Tokusł	0.038
37	3/24 00:00 ˜ 01:00	香川県	Kagawa (Takamatsı	0.055
38	3/24 00:00 ˜ 01:00	愛媛県	Ehime (Matsuyama	0.049
39	3/24 00:00 ˜ 01:00	高知県	Kochi (Kochi)	0.026
40	3/24 00:00 ˜ 01:00	福岡県	Fukuoka (Dazaifu)	0.036
41	3/24 00:00 ˜ 01:00	佐賀県	Saga (Saga)	0.04
42	3/24 00:00 ˜ 01:00	長崎県	Nagasaki (Ohmura)	0.029

43	3/24 00:00 ~ 01:00	熊本県	Kumamoto (Uto)	0.027
44	3/24 00:00 ~ 01:00	大分県	Oita (Oita)	0.049
45	3/24 00:00 ~ 01:00	宮崎県	Miyazaki (Miyazaki)	0.027
46	3/24 00:00 ~ 01:00	鹿児島県	Kagoshima (Kagosh	0.034
47	3/24 00:00 ~ 01:00	沖縄県	Okinawa (Uruma)	0.021
1	3/24 01:00 ~ 02:00	北海道	Hokkaido (Sapporo)	0.029
2	3/24 01:00 ~ 02:00	青森県	Aomori (Aomori)	0.025
3	3/24 01:00 ~ 02:00	岩手県	Iwate (Morioka)	0.032
4	3/24 01:00 ~ 02:00	宮城県	Miyagi (Sendai)	
5	3/24 01:00 ~ 02:00	秋田県	Akita (Akita)	0.035
6	3/24 01:00 ~ 02:00	山形県	Yamagata (Yamaga	0.084
7	3/24 01:00 ~ 02:00	福島県	Fukushima (Futaba-gun)	
8	3/24 01:00 ~ 02:00	茨城県	Ibaraki (Mito)	0.315
9	3/24 01:00 ~ 02:00	栃木県	Tochigi (Itsunomiya	0.138
10	3/24 01:00 ~ 02:00	群馬県	Gunma (Maebashi)	0.095
11	3/24 01:00 ~ 02:00	埼玉県	Saitama (Saitama)	0.12
12	3/24 01:00 ~ 02:00	千葉県	Chiba (Ichihara)	0.1
13	3/24 01:00 ~ 02:00	東京都	Tokyo (Shinjuku-ku	0.14
14	3/24 01:00 ~ 02:00	神奈川県	Kanagawa (Chigasa	0.097
15	3/24 01:00 ~ 02:00	新潟県	Niigata (Niigata)	0.046
16	3/24 01:00 ~ 02:00	富山県	Toyama (Imizu)	0.049
17	3/24 01:00 ~ 02:00	石川県	Ishikawa (Kanazawa	0.048
18	3/24 01:00 ~ 02:00	福井県	Fukui (Fukui)	0.046
19	3/24 01:00 ~ 02:00	山梨県	Yamanashi (Kofu)	0.046
20	3/24 01:00 ~ 02:00	長野県	Nagano (Nagano)	0.052
21	3/24 01:00 ~ 02:00	岐阜県	Gifu (Kakamigahara	0.061
22	3/24 01:00 ~ 02:00	静岡県	Shizuoka (Shizuoka	0.048
23	3/24 01:00 ~ 02:00	愛知県	Aichi (Nagoya)	0.04
24	3/24 01:00 ~ 02:00	三重県	Mie (Yokkaichi)	0.046
25	3/24 01:00 ~ 02:00	滋賀県	Shiga (Ohtsu)	0.035
26	3/24 01:00 ~ 02:00	京都府	Kyoto (Kyoto)	0.039
27	3/24 01:00 ~ 02:00	大阪府	Osaka (Osaka)	0.043
28	3/24 01:00 ~ 02:00	兵庫県	Hyogo (Kobe)	0.037
29	3/24 01:00 ~ 02:00	奈良県	Nara (Nara)	0.048
30	3/24 01:00 ~ 02:00	和歌山県	Wakayama (Wakaya	0.032
31	3/24 01:00 ~ 02:00	鳥取県	Tottori (Touhaku-g	0.068
32	3/24 01:00 ~ 02:00	島根県	Shimane (Matsue)	0.037
33	3/24 01:00 ~ 02:00	岡山県	Okayama (Okayama	0.049
34	3/24 01:00 ~ 02:00	広島県	Hiroshima (Hiroshin	0.047
35	3/24 01:00 ~ 02:00	山口県	Yamaguchi (Yamagu	0.094
36	3/24 01:00 ~ 02:00	徳島県	Tokushima (Tokush	0.038
37	3/24 01:00 ~ 02:00	香川県	Kagawa (Takamatsu	0.055
38	3/24 01:00 ~ 02:00	愛媛県	Ehime (Matsuyama)	0.049
39	3/24 01:00 ~ 02:00	高知県	Kochi (Kochi)	0.026
40	3/24 01:00 ~ 02:00	福岡県	Fukuoka (Dazaifu)	0.036
41	3/24 01:00 ~ 02:00	佐賀県	Saga (Saga)	0.04
42	3/24 01:00 ~ 02:00	長崎県	Nagasaki (Ohmura)	0.029
43	3/24 01:00 ~ 02:00	熊本県	Kumamoto (Uto)	0.027
44	3/24 01:00 ~ 02:00	大分県	Oita (Oita)	0.05
45	3/24 01:00 ~ 02:00	宮崎県	Miyazaki (Miyazaki)	0.027
46	3/24 01:00 ~ 02:00	鹿児島県	Kagoshima (Kagosh	0.035
47	3/24 01:00 ~ 02:00	沖縄県	Okinawa (Uruma)	0.021
1	3/24 02:00 ~ 03:00	北海道	Hokkaido (Sapporo)	0.029
2	3/24 02:00 ~ 03:00	青森県	Aomori (Aomori)	0.024
3	3/24 02:00 ~ 03:00	岩手県	Iwate (Morioka)	0.032
4	3/24 02:00 ~ 03:00	宮城県	Miyagi (Sendai)	
5	3/24 02:00 ~ 03:00	秋田県	Akita (Akita)	0.035

6	3/24 02:00 ~ 03:00	山形県	Yamagata (Yamaga	0.084
7	3/24 02:00 ~ 03:00	福島県	Fukushima (Futaba-gun)	
8	3/24 02:00 ~ 03:00	茨城県	Ibaraki (Mito)	0.314
9	3/24 02:00 ~ 03:00	栃木県	Tochigi (Itsunomiya	0.137
10	3/24 02:00 ~ 03:00	群馬県	Gunma (Maebashi)	0.095
11	3/24 02:00 ~ 03:00	埼玉県	Saitama (Saitama)	0.119
12	3/24 02:00 ~ 03:00	千葉県	Chiba (Ichihara)	0.1
13	3/24 02:00 ~ 03:00	東京都	Tokyo (Shinjuku-ku	0.139
14	3/24 02:00 ~ 03:00	神奈川県	Kanagawa (Chigasa	0.097
15	3/24 02:00 ~ 03:00	新潟県	Niigata (Niigata)	0.047
16	3/24 02:00 ~ 03:00	富山県	Toyama (Imizu)	0.049
17	3/24 02:00 ~ 03:00	石川県	Ishikawa (Kanazawa	0.048
18	3/24 02:00 ~ 03:00	福井県	Fukui (Fukui)	0.045
19	3/24 02:00 ~ 03:00	山梨県	Yamanashi (Kofu)	0.045
20	3/24 02:00 ~ 03:00	長野県	Nagano (Nagano)	0.053
21	3/24 02:00 ~ 03:00	岐阜県	Gifu (Kakamigahara	0.061
22	3/24 02:00 ~ 03:00	静岡県	Shizuoka (Shizuoka	0.047
23	3/24 02:00 ~ 03:00	愛知県	Aichi (Nagoya)	0.04
24	3/24 02:00 ~ 03:00	三重県	Mie (Yokkaichi)	0.046
25	3/24 02:00 ~ 03:00	滋賀県	Shiga (Ohtsu)	0.034
26	3/24 02:00 ~ 03:00	京都府	Kyoto (Kyoto)	0.039
27	3/24 02:00 ~ 03:00	大阪府	Osaka (Osaka)	0.043
28	3/24 02:00 ~ 03:00	兵庫県	Hyogo (Kobe)	0.037
29	3/24 02:00 ~ 03:00	奈良県	Nara (Nara)	0.048
30	3/24 02:00 ~ 03:00	和歌山県	Wakayama (Wakaya	0.032
31	3/24 02:00 ~ 03:00	鳥取県	Tottori (Touhaku-g	0.065
32	3/24 02:00 ~ 03:00	島根県	Shimane (Matsue)	0.037
33	3/24 02:00 ~ 03:00	岡山県	Okayama (Okayama	0.05
34	3/24 02:00 ~ 03:00	広島県	Hiroshima (Hiroshin	0.048
35	3/24 02:00 ~ 03:00	山口県	Yamaguchi (Yamagu	0.095
36	3/24 02:00 ~ 03:00	徳島県	Tokushima (Tokush	0.038
37	3/24 02:00 ~ 03:00	香川県	Kagawa (Takamatsu	0.057
38	3/24 02:00 ~ 03:00	愛媛県	Ehime (Matsuyama	0.049
39	3/24 02:00 ~ 03:00	高知県	Kochi (Kochi)	0.026
40	3/24 02:00 ~ 03:00	福岡県	Fukuoka (Dazaifu)	0.037
41	3/24 02:00 ~ 03:00	佐賀県	Saga (Saga)	0.04
42	3/24 02:00 ~ 03:00	長崎県	Nagasaki (Ohmura)	0.029
43	3/24 02:00 ~ 03:00	熊本県	Kumamoto (Uto)	0.027
44	3/24 02:00 ~ 03:00	大分県	Oita (Oita)	0.05
45	3/24 02:00 ~ 03:00	宮崎県	Miyazaki (Miyazaki)	0.027
46	3/24 02:00 ~ 03:00	鹿児島県	Kagoshima (Kagosh	0.035
47	3/24 02:00 ~ 03:00	沖縄県	Okinawa (Uruma)	0.021
1	3/24 03:00 ~ 04:00	北海道	Hokkaido (Sapporo	0.029
2	3/24 03:00 ~ 04:00	青森県	Aomori (Aomori)	0.023
3	3/24 03:00 ~ 04:00	岩手県	Iwate (Morioka)	0.032
4	3/24 03:00 ~ 04:00	宮城県	Miyagi (Sendai)	
5	3/24 03:00 ~ 04:00	秋田県	Akita (Akita)	0.036
6	3/24 03:00 ~ 04:00	山形県	Yamagata (Yamaga	0.084
7	3/24 03:00 ~ 04:00	福島県	Fukushima (Futaba-gun)	
8	3/24 03:00 ~ 04:00	茨城県	Ibaraki (Mito)	0.312
9	3/24 03:00 ~ 04:00	栃木県	Tochigi (Itsunomiya	0.137
10	3/24 03:00 ~ 04:00	群馬県	Gunma (Maebashi)	0.094
11	3/24 03:00 ~ 04:00	埼玉県	Saitama (Saitama)	0.119
12	3/24 03:00 ~ 04:00	千葉県	Chiba (Ichihara)	0.1
13	3/24 03:00 ~ 04:00	東京都	Tokyo (Shinjuku-ku	0.139
14	3/24 03:00 ~ 04:00	神奈川県	Kanagawa (Chigasa	0.097
15	3/24 03:00 ~ 04:00	新潟県	Niigata (Niigata)	0.048

16	3/24 03:00 ~ 04:00	富山県	Toyama (Imizu)	0.049
17	3/24 03:00 ~ 04:00	石川県	Ishikawa (Kanazawa	0.048
18	3/24 03:00 ~ 04:00	福井県	Fukui (Fukui)	0.046
19	3/24 03:00 ~ 04:00	山梨県	Yamanashi (Kofu)	0.046
20	3/24 03:00 ~ 04:00	長野県	Nagano (Nagano)	0.053
21	3/24 03:00 ~ 04:00	岐阜県	Gifu (Kakamigahara	0.061
22	3/24 03:00 ~ 04:00	静岡県	Shizuoka (Shizuoka	0.047
23	3/24 03:00 ~ 04:00	愛知県	Aichi (Nagoya)	0.04
24	3/24 03:00 ~ 04:00	三重県	Mie (Yokkaichi)	0.046
25	3/24 03:00 ~ 04:00	滋賀県	Shiga (Ohtsu)	0.034
26	3/24 03:00 ~ 04:00	京都府	Kyoto (Kyoto)	0.039
27	3/24 03:00 ~ 04:00	大阪府	Osaka (Osaka)	0.043
28	3/24 03:00 ~ 04:00	兵庫県	Hyogo (Kobe)	0.037
29	3/24 03:00 ~ 04:00	奈良県	Nara (Nara)	0.048
30	3/24 03:00 ~ 04:00	和歌山県	Wakayama (Wakaya	0.032
31	3/24 03:00 ~ 04:00	鳥取県	Tottori (Touhaku-g	0.064
32	3/24 03:00 ~ 04:00	島根県	Shimane (Matsue)	0.038
33	3/24 03:00 ~ 04:00	岡山県	Okayama (Okayama	0.05
34	3/24 03:00 ~ 04:00	広島県	Hiroshima (Hiroshin	0.049
35	3/24 03:00 ~ 04:00	山口県	Yamaguchi (Yamagu	0.095
36	3/24 03:00 ~ 04:00	徳島県	Tokushima (Tokush	0.039
37	3/24 03:00 ~ 04:00	香川県	Kagawa (Takamatsu	0.056
38	3/24 03:00 ~ 04:00	愛媛県	Ehime (Matsuyama	0.05
39	3/24 03:00 ~ 04:00	高知県	Kochi (Kochi)	0.025
40	3/24 03:00 ~ 04:00	福岡県	Fukuoka (Dazaifu)	0.037
41	3/24 03:00 ~ 04:00	佐賀県	Saga (Saga)	0.04
42	3/24 03:00 ~ 04:00	長崎県	Nagasaki (Ohmura)	0.029
43	3/24 03:00 ~ 04:00	熊本県	Kumamoto (Uto)	0.028
44	3/24 03:00 ~ 04:00	大分県	Oita (Oita)	0.05
45	3/24 03:00 ~ 04:00	宮崎県	Miyazaki (Miyazaki)	0.027
46	3/24 03:00 ~ 04:00	鹿児島県	Kagoshima (Kagosh	0.035
47	3/24 03:00 ~ 04:00	沖縄県	Okinawa (Uruma)	0.021
1	3/24 04:00 ~ 05:00	北海道	Hokkaido (Sapporo	0.029
2	3/24 04:00 ~ 05:00	青森県	Aomori (Aomori)	0.024
3	3/24 04:00 ~ 05:00	岩手県	Iwate (Morioka)	0.032
4	3/24 04:00 ~ 05:00	宮城県	Miyagi (Sendai)	
5	3/24 04:00 ~ 05:00	秋田県	Akita (Akita)	0.035
6	3/24 04:00 ~ 05:00	山形県	Yamagata (Yamaga	0.084
7	3/24 04:00 ~ 05:00	福島県	Fukushima (Futaba-gun)	
8	3/24 04:00 ~ 05:00	茨城県	Ibaraki (Mito)	0.312
9	3/24 04:00 ~ 05:00	栃木県	Tochigi (Itsunomiya	0.137
10	3/24 04:00 ~ 05:00	群馬県	Gunma (Maebashi)	0.094
11	3/24 04:00 ~ 05:00	埼玉県	Saitama (Saitama)	0.119
12	3/24 04:00 ~ 05:00	千葉県	Chiba (Ichihara)	0.099
13	3/24 04:00 ~ 05:00	東京都	Tokyo (Shinjuku-ku	0.139
14	3/24 04:00 ~ 05:00	神奈川県	Kanagawa (Chigasa	0.095
15	3/24 04:00 ~ 05:00	新潟県	Niigata (Niigata)	0.048
16	3/24 04:00 ~ 05:00	富山県	Toyama (Imizu)	0.049
17	3/24 04:00 ~ 05:00	石川県	Ishikawa (Kanazawa	0.048
18	3/24 04:00 ~ 05:00	福井県	Fukui (Fukui)	0.046
19	3/24 04:00 ~ 05:00	山梨県	Yamanashi (Kofu)	0.046
20	3/24 04:00 ~ 05:00	長野県	Nagano (Nagano)	0.054
21	3/24 04:00 ~ 05:00	岐阜県	Gifu (Kakamigahara	0.062
22	3/24 04:00 ~ 05:00	静岡県	Shizuoka (Shizuoka	0.047
23	3/24 04:00 ~ 05:00	愛知県	Aichi (Nagoya)	0.041
24	3/24 04:00 ~ 05:00	三重県	Mie (Yokkaichi)	0.046
25	3/24 04:00 ~ 05:00	滋賀県	Shiga (Ohtsu)	0.034

26	3/24 04:00 ~ 05:00	京都府	Kyoto (Kyoto)	0.039
27	3/24 04:00 ~ 05:00	大阪府	Osaka (Osaka)	0.043
28	3/24 04:00 ~ 05:00	兵庫県	Hyogo (Kobe)	0.038
29	3/24 04:00 ~ 05:00	奈良県	Nara (Nara)	0.048
30	3/24 04:00 ~ 05:00	和歌山県	Wakayama (Wakaya	0.033
31	3/24 04:00 ~ 05:00	鳥取県	Tottori (Touhaku-g	0.064
32	3/24 04:00 ~ 05:00	島根県	Shimane (Matsue)	0.038
33	3/24 04:00 ~ 05:00	岡山県	Okayama (Okayama	0.05
34	3/24 04:00 ~ 05:00	広島県	Hiroshima (Hiroshin	0.049
35	3/24 04:00 ~ 05:00	山口県	Yamaguchi (Yamagı	0.096
36	3/24 04:00 ~ 05:00	徳島県	Tokushima (Tokush	0.04
37	3/24 04:00 ~ 05:00	香川県	Kagawa (Takamatsı	0.056
38	3/24 04:00 ~ 05:00	愛媛県	Ehime (Matsuyama)	0.05
39	3/24 04:00 ~ 05:00	高知県	Kochi (Kochi)	0.025
40	3/24 04:00 ~ 05:00	福岡県	Fukuoka (Dazaifu)	0.037
41	3/24 04:00 ~ 05:00	佐賀県	Saga (Saga)	0.041
42	3/24 04:00 ~ 05:00	長崎県	Nagasaki (Ohmura)	0.029
43	3/24 04:00 ~ 05:00	熊本県	Kumamoto (Uto)	0.029
44	3/24 04:00 ~ 05:00	大分県	Oita (Oita)	0.05
45	3/24 04:00 ~ 05:00	宮崎県	Miyazaki (Miyazaki)	0.027
46	3/24 04:00 ~ 05:00	鹿児島県	Kagoshima (Kagosh	0.035
47	3/24 04:00 ~ 05:00	沖縄県	Okinawa (Uruma)	0.021
1	3/24 05:00 ~ 06:00	北海道	Hokkaido (Sapporo)	0.029
2	3/24 05:00 ~ 06:00	青森県	Aomori (Aomori)	0.023
3	3/24 05:00 ~ 06:00	岩手県	Iwate (Morioka)	0.033
4	3/24 05:00 ~ 06:00	宮城県	Miyagi (Sendai)	
5	3/24 05:00 ~ 06:00	秋田県	Akita (Akita)	0.035
6	3/24 05:00 ~ 06:00	山形県	Yamagata (Yamaga	0.084
7	3/24 05:00 ~ 06:00	福島県	Fukushima (Futaba-gun)	
8	3/24 05:00 ~ 06:00	茨城県	Ibaraki (Mito)	0.311
9	3/24 05:00 ~ 06:00	栃木県	Tochigi (Itsunomiya	0.136
10	3/24 05:00 ~ 06:00	群馬県	Gunma (Maebashi)	0.094
11	3/24 05:00 ~ 06:00	埼玉県	Saitama (Saitama)	0.119
12	3/24 05:00 ~ 06:00	千葉県	Chiba (Ichihara)	0.098
13	3/24 05:00 ~ 06:00	東京都	Tokyo (Shinjuku-kı	0.139
14	3/24 05:00 ~ 06:00	神奈川県	Kanagawa (Chigasa	0.096
15	3/24 05:00 ~ 06:00	新潟県	Niigata (Niigata)	0.047
16	3/24 05:00 ~ 06:00	富山県	Toyama (Imizu)	0.05
17	3/24 05:00 ~ 06:00	石川県	Ishikawa (Kanazawa	0.048
18	3/24 05:00 ~ 06:00	福井県	Fukui (Fukui)	0.046
19	3/24 05:00 ~ 06:00	山梨県	Yamanashi (Kofu)	0.046
20	3/24 05:00 ~ 06:00	長野県	Nagano (Nagano)	0.054
21	3/24 05:00 ~ 06:00	岐阜県	Gifu (Kakamigahara	0.062
22	3/24 05:00 ~ 06:00	静岡県	Shizuoka (Shizuoka	0.047
23	3/24 05:00 ~ 06:00	愛知県	Aichi (Nagoya)	0.041
24	3/24 05:00 ~ 06:00	三重県	Mie (Yokkaichi)	0.046
25	3/24 05:00 ~ 06:00	滋賀県	Shiga (Ohtsu)	0.033
26	3/24 05:00 ~ 06:00	京都府	Kyoto (Kyoto)	0.039
27	3/24 05:00 ~ 06:00	大阪府	Osaka (Osaka)	0.043
28	3/24 05:00 ~ 06:00	兵庫県	Hyogo (Kobe)	0.037
29	3/24 05:00 ~ 06:00	奈良県	Nara (Nara)	0.048
30	3/24 05:00 ~ 06:00	和歌山県	Wakayama (Wakaya	0.033
31	3/24 05:00 ~ 06:00	鳥取県	Tottori (Touhaku-g	0.064
32	3/24 05:00 ~ 06:00	島根県	Shimane (Matsue)	0.038
33	3/24 05:00 ~ 06:00	岡山県	Okayama (Okayama	0.05
34	3/24 05:00 ~ 06:00	広島県	Hiroshima (Hiroshin	0.05
35	3/24 05:00 ~ 06:00	山口県	Yamaguchi (Yamagı	0.096

36	3/24 05:00 ~ 06:00	徳島県	Tokushima (Tokush	0.039
37	3/24 05:00 ~ 06:00	香川県	Kagawa (Takamatsı	0.058
38	3/24 05:00 ~ 06:00	愛媛県	Ehime (Matsuyama)	0.051
39	3/24 05:00 ~ 06:00	高知県	Kochi (Kochi)	0.025
40	3/24 05:00 ~ 06:00	福岡県	Fukuoka (Dazaifu)	0.037
41	3/24 05:00 ~ 06:00	佐賀県	Saga (Saga)	0.041
42	3/24 05:00 ~ 06:00	長崎県	Nagasaki (Ohmura)	0.029
43	3/24 05:00 ~ 06:00	熊本県	Kumamoto (Uto)	0.029
44	3/24 05:00 ~ 06:00	大分県	Oita (Oita)	0.05
45	3/24 05:00 ~ 06:00	宮崎県	Miyazaki (Miyazaki)	0.027
46	3/24 05:00 ~ 06:00	鹿児島県	Kagoshima (Kagosh	0.035
47	3/24 05:00 ~ 06:00	沖縄県	Okinawa (Uruma)	0.021
1	3/24 06:00 ~ 07:00	北海道	Hokkaido (Sapporo)	0.029
2	3/24 06:00 ~ 07:00	青森県	Aomori (Aomori)	0.023
3	3/24 06:00 ~ 07:00	岩手県	Iwate (Morioka)	0.033
4	3/24 06:00 ~ 07:00	宮城県	Miyagi (Sendai)	
5	3/24 06:00 ~ 07:00	秋田県	Akita (Akita)	0.035
6	3/24 06:00 ~ 07:00	山形県	Yamagata (Yamaga	0.084
7	3/24 06:00 ~ 07:00	福島県	Fukushima (Futaba-gun)	
8	3/24 06:00 ~ 07:00	茨城県	Ibaraki (Mito)	0.309
9	3/24 06:00 ~ 07:00	栃木県	Tochigi (Itsunomiya	0.136
10	3/24 06:00 ~ 07:00	群馬県	Gunma (Maebashi)	0.094
11	3/24 06:00 ~ 07:00	埼玉県	Saitama (Saitama)	0.118
12	3/24 06:00 ~ 07:00	千葉県	Chiba (Ichihara)	0.098
13	3/24 06:00 ~ 07:00	東京都	Tokyo (Shinjuku-kı	0.139
14	3/24 06:00 ~ 07:00	神奈川県	Kanagawa (Chigasa	0.096
15	3/24 06:00 ~ 07:00	新潟県	Niigata (Niigata)	0.047
16	3/24 06:00 ~ 07:00	富山県	Toyama (Imizu)	0.049
17	3/24 06:00 ~ 07:00	石川県	Ishikawa (Kanazawa	0.047
18	3/24 06:00 ~ 07:00	福井県	Fukui (Fukui)	0.046
19	3/24 06:00 ~ 07:00	山梨県	Yamanashi (Kofu)	0.046
20	3/24 06:00 ~ 07:00	長野県	Nagano (Nagano)	0.054
21	3/24 06:00 ~ 07:00	岐阜県	Gifu (Kakamigahara	0.062
22	3/24 06:00 ~ 07:00	静岡県	Shizuoka (Shizuoka	0.048
23	3/24 06:00 ~ 07:00	愛知県	Aichi (Nagoya)	0.041
24	3/24 06:00 ~ 07:00	三重県	Mie (Yokkaichi)	0.046
25	3/24 06:00 ~ 07:00	滋賀県	Shiga (Ohtsu)	0.033
26	3/24 06:00 ~ 07:00	京都府	Kyoto (Kyoto)	0.039
27	3/24 06:00 ~ 07:00	大阪府	Osaka (Osaka)	0.043
28	3/24 06:00 ~ 07:00	兵庫県	Hyogo (Kobe)	0.037
29	3/24 06:00 ~ 07:00	奈良県	Nara (Nara)	0.048
30	3/24 06:00 ~ 07:00	和歌山県	Wakayama (Wakaya	0.033
31	3/24 06:00 ~ 07:00	鳥取県	Tottori (Touhaku-g	0.063
32	3/24 06:00 ~ 07:00	島根県	Shimane (Matsue)	0.041
33	3/24 06:00 ~ 07:00	岡山県	Okayama (Okayama	0.051
34	3/24 06:00 ~ 07:00	広島県	Hiroshima (Hiroshin	0.05
35	3/24 06:00 ~ 07:00	山口県	Yamaguchi (Yamagı	0.098
36	3/24 06:00 ~ 07:00	徳島県	Tokushima (Tokush	0.039
37	3/24 06:00 ~ 07:00	香川県	Kagawa (Takamatsı	0.056
38	3/24 06:00 ~ 07:00	愛媛県	Ehime (Matsuyama)	0.05
39	3/24 06:00 ~ 07:00	高知県	Kochi (Kochi)	0.026
40	3/24 06:00 ~ 07:00	福岡県	Fukuoka (Dazaifu)	0.038
41	3/24 06:00 ~ 07:00	佐賀県	Saga (Saga)	0.041
42	3/24 06:00 ~ 07:00	長崎県	Nagasaki (Ohmura)	0.029
43	3/24 06:00 ~ 07:00	熊本県	Kumamoto (Uto)	0.028
44	3/24 06:00 ~ 07:00	大分県	Oita (Oita)	0.05
45	3/24 06:00 ~ 07:00	宮崎県	Miyazaki (Miyazaki)	0.027

46	3/24 06:00 ~ 07:00	鹿児島県	Kagoshima (Kagosh	0.034
47	3/24 06:00 ~ 07:00	沖縄県	Okinawa (Uruma)	0.021
1	3/24 07:00 ~ 08:00	北海道	Hokkaido (Sapporo)	0.029
2	3/24 07:00 ~ 08:00	青森県	Aomori (Aomori)	0.023
3	3/24 07:00 ~ 08:00	岩手県	Iwate (Morioka)	0.033
4	3/24 07:00 ~ 08:00	宮城県	Miyagi (Sendai)	
5	3/24 07:00 ~ 08:00	秋田県	Akita (Akita)	0.035
6	3/24 07:00 ~ 08:00	山形県	Yamagata (Yamaga	0.084
7	3/24 07:00 ~ 08:00	福島県	Fukushima (Futaba-gun)	
8	3/24 07:00 ~ 08:00	茨城県	Ibaraki (Mito)	0.308
9	3/24 07:00 ~ 08:00	栃木県	Tochigi (Itsunomiya	0.135
10	3/24 07:00 ~ 08:00	群馬県	Gunma (Maebashi)	0.093
11	3/24 07:00 ~ 08:00	埼玉県	Saitama (Saitama)	0.118
12	3/24 07:00 ~ 08:00	千葉県	Chiba (Ichihara)	0.098
13	3/24 07:00 ~ 08:00	東京都	Tokyo (Shinjuku-ku	0.139
14	3/24 07:00 ~ 08:00	神奈川県	Kanagawa (Chigasa	0.095
15	3/24 07:00 ~ 08:00	新潟県	Niigata (Niigata)	0.048
16	3/24 07:00 ~ 08:00	富山県	Toyama (Imizu)	0.049
17	3/24 07:00 ~ 08:00	石川県	Ishikawa (Kanazawa	0.048
18	3/24 07:00 ~ 08:00	福井県	Fukui (Fukui)	0.048
19	3/24 07:00 ~ 08:00	山梨県	Yamanashi (Kofu)	0.046
20	3/24 07:00 ~ 08:00	長野県	Nagano (Nagano)	0.053
21	3/24 07:00 ~ 08:00	岐阜県	Gifu (Kakamigahara	0.062
22	3/24 07:00 ~ 08:00	静岡県	Shizuoka (Shizuoka	0.049
23	3/24 07:00 ~ 08:00	愛知県	Aichi (Nagoya)	0.041
24	3/24 07:00 ~ 08:00	三重県	Mie (Yokkaichi)	0.046
25	3/24 07:00 ~ 08:00	滋賀県	Shiga (Ohtsu)	0.033
26	3/24 07:00 ~ 08:00	京都府	Kyoto (Kyoto)	0.039
27	3/24 07:00 ~ 08:00	大阪府	Osaka (Osaka)	0.043
28	3/24 07:00 ~ 08:00	兵庫県	Hyogo (Kobe)	0.037
29	3/24 07:00 ~ 08:00	奈良県	Nara (Nara)	0.048
30	3/24 07:00 ~ 08:00	和歌山県	Wakayama (Wakaya	0.033
31	3/24 07:00 ~ 08:00	鳥取県	Tottori (Touhaku-g	0.063
32	3/24 07:00 ~ 08:00	島根県	Shimane (Matsue)	0.04
33	3/24 07:00 ~ 08:00	岡山県	Okayama (Okayama	0.05
34	3/24 07:00 ~ 08:00	広島県	Hiroshima (Hiroshin	0.05
35	3/24 07:00 ~ 08:00	山口県	Yamaguchi (Yamagu	0.096
36	3/24 07:00 ~ 08:00	徳島県	Tokushima (Tokush	0.039
37	3/24 07:00 ~ 08:00	香川県	Kagawa (Takamatsu	0.052
38	3/24 07:00 ~ 08:00	愛媛県	Ehime (Matsuyama)	0.05
39	3/24 07:00 ~ 08:00	高知県	Kochi (Kochi)	0.026
40	3/24 07:00 ~ 08:00	福岡県	Fukuoka (Dazaifu)	0.037
41	3/24 07:00 ~ 08:00	佐賀県	Saga (Saga)	0.041
42	3/24 07:00 ~ 08:00	長崎県	Nagasaki (Ohmura)	0.029
43	3/24 07:00 ~ 08:00	熊本県	Kumamoto (Uto)	0.028
44	3/24 07:00 ~ 08:00	大分県	Oita (Oita)	0.051
45	3/24 07:00 ~ 08:00	宮崎県	Miyazaki (Miyazaki)	0.027
46	3/24 07:00 ~ 08:00	鹿児島県	Kagoshima (Kagosh	0.034
47	3/24 07:00 ~ 08:00	沖縄県	Okinawa (Uruma)	0.021
1	3/24 08:00 ~ 09:00	北海道	Hokkaido (Sapporo)	0.028
2	3/24 08:00 ~ 09:00	青森県	Aomori (Aomori)	0.023
3	3/24 08:00 ~ 09:00	岩手県	Iwate (Morioka)	0.032
4	3/24 08:00 ~ 09:00	宮城県	Miyagi (Sendai)	
5	3/24 08:00 ~ 09:00	秋田県	Akita (Akita)	0.035
6	3/24 08:00 ~ 09:00	山形県	Yamagata (Yamaga	0.083
7	3/24 08:00 ~ 09:00	福島県	Fukushima (Futaba-gun)	
8	3/24 08:00 ~ 09:00	茨城県	Ibaraki (Mito)	0.306

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9	3/24 08:00 ~ 09:00	栃木県	Tochigi (Itsunomiya	0.135
10	3/24 08:00 ~ 09:00	群馬県	Gunma (Maebashi)	0.092
11	3/24 08:00 ~ 09:00	埼玉県	Saitama (Saitama)	0.118
12	3/24 08:00 ~ 09:00	千葉県	Chiba (Ichihara)	0.097
13	3/24 08:00 ~ 09:00	東京都	Tokyo (Shinjuku-ku	0.139
14	3/24 08:00 ~ 09:00	神奈川県	Kanagawa (Chigasa	0.094
15	3/24 08:00 ~ 09:00	新潟県	Niigata (Niigata)	0.047
16	3/24 08:00 ~ 09:00	富山県	Toyama (Imizu)	0.049
17	3/24 08:00 ~ 09:00	石川県	Ishikawa (Kanazawa	0.049
18	3/24 08:00 ~ 09:00	福井県	Fukui (Fukui)	0.048
19	3/24 08:00 ~ 09:00	山梨県	Yamanashi (Kofu)	0.046
20	3/24 08:00 ~ 09:00	長野県	Nagano (Nagano)	0.054
21	3/24 08:00 ~ 09:00	岐阜県	Gifu (Kakamigahara	0.062
22	3/24 08:00 ~ 09:00	静岡県	Shizuoka (Shizuoka	0.048
23	3/24 08:00 ~ 09:00	愛知県	Aichi (Nagoya)	0.041
24	3/24 08:00 ~ 09:00	三重県	Mie (Yokkaichi)	0.046
25	3/24 08:00 ~ 09:00	滋賀県	Shiga (Ohtsu)	0.033
26	3/24 08:00 ~ 09:00	京都府	Kyoto (Kyoto)	0.039
27	3/24 08:00 ~ 09:00	大阪府	Osaka (Osaka)	0.043
28	3/24 08:00 ~ 09:00	兵庫県	Hyogo (Kobe)	0.037
29	3/24 08:00 ~ 09:00	奈良県	Nara (Nara)	0.048
30	3/24 08:00 ~ 09:00	和歌山県	Wakayama (Wakaya	0.033
31	3/24 08:00 ~ 09:00	鳥取県	Tottori (Touhaku-g	0.064
32	3/24 08:00 ~ 09:00	島根県	Shimane (Matsue)	0.038
33	3/24 08:00 ~ 09:00	岡山県	Okayama (Okayama	0.05
34	3/24 08:00 ~ 09:00	広島県	Hiroshima (Hiroshin	0.05
35	3/24 08:00 ~ 09:00	山口県	Yamaguchi (Yamagu	0.096
36	3/24 08:00 ~ 09:00	徳島県	Tokushima (Tokush	0.038
37	3/24 08:00 ~ 09:00	香川県	Kagawa (Takamatsu	0.052
38	3/24 08:00 ~ 09:00	愛媛県	Ehime (Matsuyama)	0.048
39	3/24 08:00 ~ 09:00	高知県	Kochi (Kochi)	0.026
40	3/24 08:00 ~ 09:00	福岡県	Fukuoka (Dazaifu)	0.037
41	3/24 08:00 ~ 09:00	佐賀県	Saga (Saga)	0.041
42	3/24 08:00 ~ 09:00	長崎県	Nagasaki (Ohmura)	0.029
43	3/24 08:00 ~ 09:00	熊本県	Kumamoto (Uto)	0.029
44	3/24 08:00 ~ 09:00	大分県	Oita (Oita)	0.051
45	3/24 08:00 ~ 09:00	宮崎県	Miyazaki (Miyazaki)	0.027
46	3/24 08:00 ~ 09:00	鹿児島県	Kagoshima (Kagosh	0.034
47	3/24 08:00 ~ 09:00	沖縄県	Okinawa (Uruma)	0.021
1	3/24 09:00 ~ 10:00	北海道	Hokkaido (Sapporo)	0.028
2	3/24 09:00 ~ 10:00	青森県	Aomori (Aomori)	0.022
3	3/24 09:00 ~ 10:00	岩手県	Iwate (Morioka)	0.031
4	3/24 09:00 ~ 10:00	宮城県	Miyagi (Sendai)	
5	3/24 09:00 ~ 10:00	秋田県	Akita (Akita)	0.035
6	3/24 09:00 ~ 10:00	山形県	Yamagata (Yamaga	0.083
7	3/24 09:00 ~ 10:00	福島県	Fukushima (Futaba-gun)	
8	3/24 09:00 ~ 10:00	茨城県	Ibaraki (Mito)	0.304
9	3/24 09:00 ~ 10:00	栃木県	Tochigi (Itsunomiya	0.134
10	3/24 09:00 ~ 10:00	群馬県	Gunma (Maebashi)	0.091
11	3/24 09:00 ~ 10:00	埼玉県	Saitama (Saitama)	0.117
12	3/24 09:00 ~ 10:00	千葉県	Chiba (Ichihara)	0.097
13	3/24 09:00 ~ 10:00	東京都	Tokyo (Shinjuku-ku	0.138
14	3/24 09:00 ~ 10:00	神奈川県	Kanagawa (Chigasa	0.093
15	3/24 09:00 ~ 10:00	新潟県	Niigata (Niigata)	0.047
16	3/24 09:00 ~ 10:00	富山県	Toyama (Imizu)	0.05
17	3/24 09:00 ~ 10:00	石川県	Ishikawa (Kanazawa	0.048
18	3/24 09:00 ~ 10:00	福井県	Fukui (Fukui)	0.046

19	3/24 09:00 ~ 10:00	山梨県	Yamanashi (Kofu)	0.045
20	3/24 09:00 ~ 10:00	長野県	Nagano (Nagano)	0.053
21	3/24 09:00 ~ 10:00	岐阜県	Gifu (Kakamigahara	0.062
22	3/24 09:00 ~ 10:00	静岡県	Shizuoka (Shizuoka	0.047
23	3/24 09:00 ~ 10:00	愛知県	Aichi (Nagoya)	0.04
24	3/24 09:00 ~ 10:00	三重県	Mie (Yokkaichi)	0.046
25	3/24 09:00 ~ 10:00	滋賀県	Shiga (Ohtsu)	0.033
26	3/24 09:00 ~ 10:00	京都府	Kyoto (Kyoto)	0.039
27	3/24 09:00 ~ 10:00	大阪府	Osaka (Osaka)	0.043
28	3/24 09:00 ~ 10:00	兵庫県	Hyogo (Kobe)	0.037
29	3/24 09:00 ~ 10:00	奈良県	Nara (Nara)	0.048
30	3/24 09:00 ~ 10:00	和歌山県	Wakayama (Wakaya	0.032
31	3/24 09:00 ~ 10:00	鳥取県	Tottori (Touhaku-g	0.063
32	3/24 09:00 ~ 10:00	島根県	Shimane (Matsue)	0.037
33	3/24 09:00 ~ 10:00	岡山県	Okayama (Okayama	0.049
34	3/24 09:00 ~ 10:00	広島県	Hiroshima (Hiroshin	0.049
35	3/24 09:00 ~ 10:00	山口県	Yamaguchi (Yamagı	0.094
36	3/24 09:00 ~ 10:00	徳島県	Tokushima (Tokush	0.038
37	3/24 09:00 ~ 10:00	香川県	Kagawa (Takamatsı	0.053
38	3/24 09:00 ~ 10:00	愛媛県	Ehime (Matsuyama	0.048
39	3/24 09:00 ~ 10:00	高知県	Kochi (Kochi)	0.026
40	3/24 09:00 ~ 10:00	福岡県	Fukuoka (Dazaifu)	0.037
41	3/24 09:00 ~ 10:00	佐賀県	Saga (Saga)	0.04
42	3/24 09:00 ~ 10:00	長崎県	Nagasaki (Ohmura)	0.029
43	3/24 09:00 ~ 10:00	熊本県	Kumamoto (Uto)	0.029
44	3/24 09:00 ~ 10:00	大分県	Oita (Oita)	0.05
45	3/24 09:00 ~ 10:00	宮崎県	Miyazaki (Miyazaki)	0.027
46	3/24 09:00 ~ 10:00	鹿児島県	Kagoshima (Kagosh	0.034
47	3/24 09:00 ~ 10:00	沖縄県	Okinawa (Uruma)	0.021
1	3/24 10:00 ~ 11:00	北海道	Hokkaido (Sapporo	0.028
2	3/24 10:00 ~ 11:00	青森県	Aomori (Aomori)	0.022
3	3/24 10:00 ~ 11:00	岩手県	Iwate (Morioka)	0.031
4	3/24 10:00 ~ 11:00	宮城県	Miyagi (Sendai)	
5	3/24 10:00 ~ 11:00	秋田県	Akita (Akita)	0.035
6	3/24 10:00 ~ 11:00	山形県	Yamagata (Yamaga	0.082
7	3/24 10:00 ~ 11:00	福島県	Fukushima (Futaba-gun)	
8	3/24 10:00 ~ 11:00	茨城県	Ibaraki (Mito)	0.303
9	3/24 10:00 ~ 11:00	栃木県	Tochigi (Itsunomiya	0.134
10	3/24 10:00 ~ 11:00	群馬県	Gunma (Maebashi)	0.09
11	3/24 10:00 ~ 11:00	埼玉県	Saitama (Saitama)	0.116
12	3/24 10:00 ~ 11:00	千葉県	Chiba (Ichihara)	0.096
13	3/24 10:00 ~ 11:00	東京都	Tokyo (Shinjuku-kı	0.138
14	3/24 10:00 ~ 11:00	神奈川県	Kanagawa (Chigasa	0.093
15	3/24 10:00 ~ 11:00	新潟県	Niigata (Niigata)	0.047
16	3/24 10:00 ~ 11:00	富山県	Toyama (Imizu)	0.049
17	3/24 10:00 ~ 11:00	石川県	Ishikawa (Kanazawa	0.047
18	3/24 10:00 ~ 11:00	福井県	Fukui (Fukui)	0.045
19	3/24 10:00 ~ 11:00	山梨県	Yamanashi (Kofu)	0.045
20	3/24 10:00 ~ 11:00	長野県	Nagano (Nagano)	0.052
21	3/24 10:00 ~ 11:00	岐阜県	Gifu (Kakamigahara	0.062
22	3/24 10:00 ~ 11:00	静岡県	Shizuoka (Shizuoka	0.047
23	3/24 10:00 ~ 11:00	愛知県	Aichi (Nagoya)	0.04
24	3/24 10:00 ~ 11:00	三重県	Mie (Yokkaichi)	0.046
25	3/24 10:00 ~ 11:00	滋賀県	Shiga (Ohtsu)	0.033
26	3/24 10:00 ~ 11:00	京都府	Kyoto (Kyoto)	0.038
27	3/24 10:00 ~ 11:00	大阪府	Osaka (Osaka)	0.043
28	3/24 10:00 ~ 11:00	兵庫県	Hyogo (Kobe)	0.037

29	3/24 10:00 ~ 11:00	奈良県	Nara (Nara)	0.047
30	3/24 10:00 ~ 11:00	和歌山県	Wakayama (Wakaya	0.032
31	3/24 10:00 ~ 11:00	鳥取県	Tottori (Touhaku-g	0.063
32	3/24 10:00 ~ 11:00	島根県	Shimane (Matsue)	0.036
33	3/24 10:00 ~ 11:00	岡山県	Okayama (Okayama	0.048
34	3/24 10:00 ~ 11:00	広島県	Hiroshima (Hiroshin	0.048
35	3/24 10:00 ~ 11:00	山口県	Yamaguchi (Yamagı	0.092
36	3/24 10:00 ~ 11:00	徳島県	Tokushima (Tokush	0.037
37	3/24 10:00 ~ 11:00	香川県	Kagawa (Takamatsı	0.052
38	3/24 10:00 ~ 11:00	愛媛県	Ehime (Matsuyama)	0.047
39	3/24 10:00 ~ 11:00	高知県	Kochi (Kochi)	0.025
40	3/24 10:00 ~ 11:00	福岡県	Fukuoka (Dazaifu)	0.037
41	3/24 10:00 ~ 11:00	佐賀県	Saga (Saga)	0.041
42	3/24 10:00 ~ 11:00	長崎県	Nagasaki (Ohmura)	0.029
43	3/24 10:00 ~ 11:00	熊本県	Kumamoto (Uto)	0.028
44	3/24 10:00 ~ 11:00	大分県	Oita (Oita)	0.05
45	3/24 10:00 ~ 11:00	宮崎県	Miyazaki (Miyazaki)	0.027
46	3/24 10:00 ~ 11:00	鹿児島県	Kagoshima (Kagosh	0.034
47	3/24 10:00 ~ 11:00	沖縄県	Okinawa (Uruma)	0.021
1	3/24 11:00 ~ 12:00	北海道	Hokkaido (Sapporo)	0.028
2	3/24 11:00 ~ 12:00	青森県	Aomori (Aomori)	0.022
3	3/24 11:00 ~ 12:00	岩手県	Iwate (Morioka)	0.03
4	3/24 11:00 ~ 12:00	宮城県	Miyagi (Sendai)	
5	3/24 11:00 ~ 12:00	秋田県	Akita (Akita)	0.041
6	3/24 11:00 ~ 12:00	山形県	Yamagata (Yamaga	0.082
7	3/24 11:00 ~ 12:00	福島県	Fukushima (Futaba-gun)	
8	3/24 11:00 ~ 12:00	茨城県	Ibaraki (Mito)	0.302
9	3/24 11:00 ~ 12:00	栃木県	Tochigi (Itsunomiya	0.133
10	3/24 11:00 ~ 12:00	群馬県	Gunma (Maebashi)	0.089
11	3/24 11:00 ~ 12:00	埼玉県	Saitama (Saitama)	0.116
12	3/24 11:00 ~ 12:00	千葉県	Chiba (Ichihara)	0.096
13	3/24 11:00 ~ 12:00	東京都	Tokyo (Shinjuku-kı	0.138
14	3/24 11:00 ~ 12:00	神奈川県	Kanagawa (Chigasa	0.092
15	3/24 11:00 ~ 12:00	新潟県	Niigata (Niigata)	0.047
16	3/24 11:00 ~ 12:00	富山県	Toyama (Imizu)	0.048
17	3/24 11:00 ~ 12:00	石川県	Ishikawa (Kanazawa	0.047
18	3/24 11:00 ~ 12:00	福井県	Fukui (Fukui)	0.048
19	3/24 11:00 ~ 12:00	山梨県	Yamanashi (Kofu)	0.045
20	3/24 11:00 ~ 12:00	長野県	Nagano (Nagano)	0.052
21	3/24 11:00 ~ 12:00	岐阜県	Gifu (Kakamigahara	0.061
22	3/24 11:00 ~ 12:00	静岡県	Shizuoka (Shizuoka	0.047
23	3/24 11:00 ~ 12:00	愛知県	Aichi (Nagoya)	0.04
24	3/24 11:00 ~ 12:00	三重県	Mie (Yokkaichi)	0.046
25	3/24 11:00 ~ 12:00	滋賀県	Shiga (Ohtsu)	0.033
26	3/24 11:00 ~ 12:00	京都府	Kyoto (Kyoto)	0.038
27	3/24 11:00 ~ 12:00	大阪府	Osaka (Osaka)	0.043
28	3/24 11:00 ~ 12:00	兵庫県	Hyogo (Kobe)	0.037
29	3/24 11:00 ~ 12:00	奈良県	Nara (Nara)	0.047
30	3/24 11:00 ~ 12:00	和歌山県	Wakayama (Wakaya	0.032
31	3/24 11:00 ~ 12:00	鳥取県	Tottori (Touhaku-g	0.064
32	3/24 11:00 ~ 12:00	島根県	Shimane (Matsue)	0.036
33	3/24 11:00 ~ 12:00	岡山県	Okayama (Okayama	0.049
34	3/24 11:00 ~ 12:00	広島県	Hiroshima (Hiroshin	0.048
35	3/24 11:00 ~ 12:00	山口県	Yamaguchi (Yamagı	0.09
36	3/24 11:00 ~ 12:00	徳島県	Tokushima (Tokush	0.038
37	3/24 11:00 ~ 12:00	香川県	Kagawa (Takamatsı	0.052
38	3/24 11:00 ~ 12:00	愛媛県	Ehime (Matsuyama)	0.047

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39	3/24 11:00 ~ 12:00	高知県	Kochi (Kochi)	0.025
40	3/24 11:00 ~ 12:00	福岡県	Fukuoka (Dazaifu)	0.037
41	3/24 11:00 ~ 12:00	佐賀県	Saga (Saga)	0.04
42	3/24 11:00 ~ 12:00	長崎県	Nagasaki (Ohmura)	0.029
43	3/24 11:00 ~ 12:00	熊本県	Kumamoto (Uto)	0.027
44	3/24 11:00 ~ 12:00	大分県	Oita (Oita)	0.05
45	3/24 11:00 ~ 12:00	宮崎県	Miyazaki (Miyazaki)	0.027
46	3/24 11:00 ~ 12:00	鹿児島県	Kagoshima (Kagosh	0.034
47	3/24 11:00 ~ 12:00	沖縄県	Okinawa (Uruma)	0.021
1	3/24 12:00 ~ 13:00	北海道	Hokkaido (Sapporo)	0.028
2	3/24 12:00 ~ 13:00	青森県	Aomori (Aomori)	0.023
3	3/24 12:00 ~ 13:00	岩手県	Iwate (Morioka)	0.031
4	3/24 12:00 ~ 13:00	宮城県	Miyagi (Sendai)	
5	3/24 12:00 ~ 13:00	秋田県	Akita (Akita)	0.048
6	3/24 12:00 ~ 13:00	山形県	Yamagata (Yamaga	0.082
7	3/24 12:00 ~ 13:00	福島県	Fukushima (Futaba-gun)	
8	3/24 12:00 ~ 13:00	茨城県	Ibaraki (Mito)	0.301
9	3/24 12:00 ~ 13:00	栃木県	Tochigi (Itsunomiya	0.132
10	3/24 12:00 ~ 13:00	群馬県	Gunma (Maebashi)	0.088
11	3/24 12:00 ~ 13:00	埼玉県	Saitama (Saitama)	0.115
12	3/24 12:00 ~ 13:00	千葉県	Chiba (Ichihara)	0.095
13	3/24 12:00 ~ 13:00	東京都	Tokyo (Shinjuku-ku	0.138
14	3/24 12:00 ~ 13:00	神奈川県	Kanagawa (Chigasa	0.092
15	3/24 12:00 ~ 13:00	新潟県	Niigata (Niigata)	0.049
16	3/24 12:00 ~ 13:00	富山県	Toyama (Imizu)	0.048
17	3/24 12:00 ~ 13:00	石川県	Ishikawa (Kanazawa	0.047
18	3/24 12:00 ~ 13:00	福井県	Fukui (Fukui)	0.052
19	3/24 12:00 ~ 13:00	山梨県	Yamanashi (Kofu)	0.045
20	3/24 12:00 ~ 13:00	長野県	Nagano (Nagano)	0.051
21	3/24 12:00 ~ 13:00	岐阜県	Gifu (Kakamigahara	0.061
22	3/24 12:00 ~ 13:00	静岡県	Shizuoka (Shizuoka	0.047
23	3/24 12:00 ~ 13:00	愛知県	Aichi (Nagoya)	0.039
24	3/24 12:00 ~ 13:00	三重県	Mie (Yokkaichi)	0.046
25	3/24 12:00 ~ 13:00	滋賀県	Shiga (Ohtsu)	0.033
26	3/24 12:00 ~ 13:00	京都府	Kyoto (Kyoto)	0.038
27	3/24 12:00 ~ 13:00	大阪府	Osaka (Osaka)	0.042
28	3/24 12:00 ~ 13:00	兵庫県	Hyogo (Kobe)	0.037
29	3/24 12:00 ~ 13:00	奈良県	Nara (Nara)	0.047
30	3/24 12:00 ~ 13:00	和歌山県	Wakayama (Wakaya	0.031
31	3/24 12:00 ~ 13:00	鳥取県	Tottori (Touhaku-g	0.063
32	3/24 12:00 ~ 13:00	島根県	Shimane (Matsue)	0.036
33	3/24 12:00 ~ 13:00	岡山県	Okayama (Okayama	0.048
34	3/24 12:00 ~ 13:00	広島県	Hiroshima (Hiroshin	0.047
35	3/24 12:00 ~ 13:00	山口県	Yamaguchi (Yamagu	0.09
36	3/24 12:00 ~ 13:00	徳島県	Tokushima (Tokush	0.037
37	3/24 12:00 ~ 13:00	香川県	Kagawa (Takamatsu	0.052
38	3/24 12:00 ~ 13:00	愛媛県	Ehime (Matsuyama)	0.047
39	3/24 12:00 ~ 13:00	高知県	Kochi (Kochi)	0.025
40	3/24 12:00 ~ 13:00	福岡県	Fukuoka (Dazaifu)	0.036
41	3/24 12:00 ~ 13:00	佐賀県	Saga (Saga)	0.04
42	3/24 12:00 ~ 13:00	長崎県	Nagasaki (Ohmura)	0.029
43	3/24 12:00 ~ 13:00	熊本県	Kumamoto (Uto)	0.027
44	3/24 12:00 ~ 13:00	大分県	Oita (Oita)	0.05
45	3/24 12:00 ~ 13:00	宮崎県	Miyazaki (Miyazaki)	0.027
46	3/24 12:00 ~ 13:00	鹿児島県	Kagoshima (Kagosh	0.034
47	3/24 12:00 ~ 13:00	沖縄県	Okinawa (Uruma)	0.021
1	3/24 13:00 ~ 14:00	北海道	Hokkaido (Sapporo)	0.028

2	3/24 13:00 ~ 14:00	青森県	Aomori (Aomori)	0.023
3	3/24 13:00 ~ 14:00	岩手県	Iwate (Morioka)	0.031
4	3/24 13:00 ~ 14:00	宮城県	Miyagi (Sendai)	
5	3/24 13:00 ~ 14:00	秋田県	Akita (Akita)	0.049
6	3/24 13:00 ~ 14:00	山形県	Yamagata (Yamaga	0.082
7	3/24 13:00 ~ 14:00	福島県	Fukushima (Futaba-gun)	
8	3/24 13:00 ~ 14:00	茨城県	Ibaraki (Mito)	0.3
9	3/24 13:00 ~ 14:00	栃木県	Tochigi (Itsunomiya	0.131
10	3/24 13:00 ~ 14:00	群馬県	Gunma (Maebashi)	0.088
11	3/24 13:00 ~ 14:00	埼玉県	Saitama (Saitama)	0.115
12	3/24 13:00 ~ 14:00	千葉県	Chiba (Ichihara)	0.095
13	3/24 13:00 ~ 14:00	東京都	Tokyo (Shinjuku-ku	0.137
14	3/24 13:00 ~ 14:00	神奈川県	Kanagawa (Chigasa	0.092
15	3/24 13:00 ~ 14:00	新潟県	Niigata (Niigata)	0.05
16	3/24 13:00 ~ 14:00	富山県	Toyama (Imizu)	0.048
17	3/24 13:00 ~ 14:00	石川県	Ishikawa (Kanazawa	0.051
18	3/24 13:00 ~ 14:00	福井県	Fukui (Fukui)	0.054
19	3/24 13:00 ~ 14:00	山梨県	Yamanashi (Kofu)	0.045
20	3/24 13:00 ~ 14:00	長野県	Nagano (Nagano)	0.051
21	3/24 13:00 ~ 14:00	岐阜県	Gifu (Kakamigahara	0.061
22	3/24 13:00 ~ 14:00	静岡県	Shizuoka (Shizuoka	0.048
23	3/24 13:00 ~ 14:00	愛知県	Aichi (Nagoya)	0.039
24	3/24 13:00 ~ 14:00	三重県	Mie (Yokkaichi)	0.046
25	3/24 13:00 ~ 14:00	滋賀県	Shiga (Ohtsu)	0.033
26	3/24 13:00 ~ 14:00	京都府	Kyoto (Kyoto)	0.038
27	3/24 13:00 ~ 14:00	大阪府	Osaka (Osaka)	0.043
28	3/24 13:00 ~ 14:00	兵庫県	Hyogo (Kobe)	0.037
29	3/24 13:00 ~ 14:00	奈良県	Nara (Nara)	0.047
30	3/24 13:00 ~ 14:00	和歌山県	Wakayama (Wakaya	0.031
31	3/24 13:00 ~ 14:00	鳥取県	Tottori (Touhaku-g	0.063
32	3/24 13:00 ~ 14:00	島根県	Shimane (Matsue)	0.036
33	3/24 13:00 ~ 14:00	岡山県	Okayama (Okayama	0.048
34	3/24 13:00 ~ 14:00	広島県	Hiroshima (Hiroshin	0.046
35	3/24 13:00 ~ 14:00	山口県	Yamaguchi (Yamagu	0.09
36	3/24 13:00 ~ 14:00	徳島県	Tokushima (Tokush	0.037
37	3/24 13:00 ~ 14:00	香川県	Kagawa (Takamatsu	0.055
38	3/24 13:00 ~ 14:00	愛媛県	Ehime (Matsuyama	0.047
39	3/24 13:00 ~ 14:00	高知県	Kochi (Kochi)	0.025
40	3/24 13:00 ~ 14:00	福岡県	Fukuoka (Dazaifu)	0.036
41	3/24 13:00 ~ 14:00	佐賀県	Saga (Saga)	0.04
42	3/24 13:00 ~ 14:00	長崎県	Nagasaki (Ohmura)	0.029
43	3/24 13:00 ~ 14:00	熊本県	Kumamoto (Uto)	0.027
44	3/24 13:00 ~ 14:00	大分県	Oita (Oita)	0.049
45	3/24 13:00 ~ 14:00	宮崎県	Miyazaki (Miyazaki)	0.026
46	3/24 13:00 ~ 14:00	鹿児島県	Kagoshima (Kagosh	0.034
47	3/24 13:00 ~ 14:00	沖縄県	Okinawa (Uruma)	0.021
1	3/24 14:00 ~ 15:00	北海道	Hokkaido (Sapporo	0.028
2	3/24 14:00 ~ 15:00	青森県	Aomori (Aomori)	0.024
3	3/24 14:00 ~ 15:00	岩手県	Iwate (Morioka)	0.032
4	3/24 14:00 ~ 15:00	宮城県	Miyagi (Sendai)	
5	3/24 14:00 ~ 15:00	秋田県	Akita (Akita)	0.042
6	3/24 14:00 ~ 15:00	山形県	Yamagata (Yamaga	0.083
7	3/24 14:00 ~ 15:00	福島県	Fukushima (Futaba-gun)	
8	3/24 14:00 ~ 15:00	茨城県	Ibaraki (Mito)	0.299
9	3/24 14:00 ~ 15:00	栃木県	Tochigi (Itsunomiya	0.131
10	3/24 14:00 ~ 15:00	群馬県	Gunma (Maebashi)	0.087
11	3/24 14:00 ~ 15:00	埼玉県	Saitama (Saitama)	0.115

12	3/24 14:00 ~ 15:00	千葉県	Chiba (Ichihara)	0.095
13	3/24 14:00 ~ 15:00	東京都	Tokyo (Shinjuku-kı	0.136
14	3/24 14:00 ~ 15:00	神奈川県	Kanagawa (Chigasa	0.092
15	3/24 14:00 ~ 15:00	新潟県	Niigata (Niigata)	0.048
16	3/24 14:00 ~ 15:00	富山県	Toyama (Imizu)	0.052
17	3/24 14:00 ~ 15:00	石川県	Ishikawa (Kanazawa	0.054
18	3/24 14:00 ~ 15:00	福井県	Fukui (Fukui)	0.055
19	3/24 14:00 ~ 15:00	山梨県	Yamanashi (Kofu)	0.045
20	3/24 14:00 ~ 15:00	長野県	Nagano (Nagano)	0.051
21	3/24 14:00 ~ 15:00	岐阜県	Gifu (Kakamigahara	0.061
22	3/24 14:00 ~ 15:00	静岡県	Shizuoka (Shizuoka	0.049
23	3/24 14:00 ~ 15:00	愛知県	Aichi (Nagoya)	0.039
24	3/24 14:00 ~ 15:00	三重県	Mie (Yokkaichi)	0.046
25	3/24 14:00 ~ 15:00	滋賀県	Shiga (Ohtsu)	0.033
26	3/24 14:00 ~ 15:00	京都府	Kyoto (Kyoto)	0.038
27	3/24 14:00 ~ 15:00	大阪府	Osaka (Osaka)	0.043
28	3/24 14:00 ~ 15:00	兵庫県	Hyogo (Kobe)	0.037
29	3/24 14:00 ~ 15:00	奈良県	Nara (Nara)	0.047
30	3/24 14:00 ~ 15:00	和歌山県	Wakayama (Wakaya	0.031
31	3/24 14:00 ~ 15:00	鳥取県	Tottori (Touhaku-g	0.063
32	3/24 14:00 ~ 15:00	島根県	Shimane (Matsue)	0.036
33	3/24 14:00 ~ 15:00	岡山県	Okayama (Okayama	0.048
34	3/24 14:00 ~ 15:00	広島県	Hiroshima (Hiroshin	0.046
35	3/24 14:00 ~ 15:00	山口県	Yamaguchi (Yamagı	0.09
36	3/24 14:00 ~ 15:00	徳島県	Tokushima (Tokush	0.037
37	3/24 14:00 ~ 15:00	香川県	Kagawa (Takamatsı	0.054
38	3/24 14:00 ~ 15:00	愛媛県	Ehime (Matsuyama	0.047
39	3/24 14:00 ~ 15:00	高知県	Kochi (Kochi)	0.025
40	3/24 14:00 ~ 15:00	福岡県	Fukuoka (Dazaifu)	0.036
41	3/24 14:00 ~ 15:00	佐賀県	Saga (Saga)	0.04
42	3/24 14:00 ~ 15:00	長崎県	Nagasaki (Ohmura)	0.029
43	3/24 14:00 ~ 15:00	熊本県	Kumamoto (Uto)	0.027
44	3/24 14:00 ~ 15:00	大分県	Oita (Oita)	0.05
45	3/24 14:00 ~ 15:00	宮崎県	Miyazaki (Miyazaki)	0.026
46	3/24 14:00 ~ 15:00	鹿児島県	Kagoshima (Kagosh	0.034
47	3/24 14:00 ~ 15:00	沖縄県	Okinawa (Uruma)	0.021
1	3/24 15:00 ~ 16:00	北海道	Hokkaido (Sapporo	0.028
2	3/24 15:00 ~ 16:00	青森県	Aomori (Aomori)	0.024
3	3/24 15:00 ~ 16:00	岩手県	Iwate (Morioka)	0.033
4	3/24 15:00 ~ 16:00	宮城県	Miyagi (Sendai)	
5	3/24 15:00 ~ 16:00	秋田県	Akita (Akita)	0.036
6	3/24 15:00 ~ 16:00	山形県	Yamagata (Yamaga	0.083
7	3/24 15:00 ~ 16:00	福島県	Fukushima (Futaba-gun)	
8	3/24 15:00 ~ 16:00	茨城県	Ibaraki (Mito)	0.298
9	3/24 15:00 ~ 16:00	栃木県	Tochigi (Itsunomiya	0.131
10	3/24 15:00 ~ 16:00	群馬県	Gunma (Maebashi)	0.087
11	3/24 15:00 ~ 16:00	埼玉県	Saitama (Saitama)	0.114
12	3/24 15:00 ~ 16:00	千葉県	Chiba (Ichihara)	0.095
13	3/24 15:00 ~ 16:00	東京都	Tokyo (Shinjuku-kı	0.136
14	3/24 15:00 ~ 16:00	神奈川県	Kanagawa (Chigasa	0.091
15	3/24 15:00 ~ 16:00	新潟県	Niigata (Niigata)	0.047
16	3/24 15:00 ~ 16:00	富山県	Toyama (Imizu)	0.056
17	3/24 15:00 ~ 16:00	石川県	Ishikawa (Kanazawa	0.057
18	3/24 15:00 ~ 16:00	福井県	Fukui (Fukui)	0.056
19	3/24 15:00 ~ 16:00	山梨県	Yamanashi (Kofu)	0.046
20	3/24 15:00 ~ 16:00	長野県	Nagano (Nagano)	0.051
21	3/24 15:00 ~ 16:00	岐阜県	Gifu (Kakamigahara	0.062

22	3/24 15:00 ~ 16:00	静岡県	Shizuoka (Shizuoka	0.049
23	3/24 15:00 ~ 16:00	愛知県	Aichi (Nagoya)	0.04
24	3/24 15:00 ~ 16:00	三重県	Mie (Yokkaichi)	0.046
25	3/24 15:00 ~ 16:00	滋賀県	Shiga (Ohtsu)	0.033
26	3/24 15:00 ~ 16:00	京都府	Kyoto (Kyoto)	0.038
27	3/24 15:00 ~ 16:00	大阪府	Osaka (Osaka)	0.042
28	3/24 15:00 ~ 16:00	兵庫県	Hyogo (Kobe)	0.037
29	3/24 15:00 ~ 16:00	奈良県	Nara (Nara)	0.047
30	3/24 15:00 ~ 16:00	和歌山県	Wakayama (Wakaya	0.031
31	3/24 15:00 ~ 16:00	鳥取県	Tottori (Touhaku-g	0.063
32	3/24 15:00 ~ 16:00	島根県	Shimane (Matsue)	0.036
33	3/24 15:00 ~ 16:00	岡山県	Okayama (Okayama	0.048
34	3/24 15:00 ~ 16:00	広島県	Hiroshima (Hiroshin	0.046
35	3/24 15:00 ~ 16:00	山口県	Yamaguchi (Yamagı	0.09
36	3/24 15:00 ~ 16:00	徳島県	Tokushima (Tokush	0.038
37	3/24 15:00 ~ 16:00	香川県	Kagawa (Takamatsı	0.055
38	3/24 15:00 ~ 16:00	愛媛県	Ehime (Matsuyama)	0.047
39	3/24 15:00 ~ 16:00	高知県	Kochi (Kochi)	0.025
40	3/24 15:00 ~ 16:00	福岡県	Fukuoka (Dazaifu)	0.036
41	3/24 15:00 ~ 16:00	佐賀県	Saga (Saga)	0.04
42	3/24 15:00 ~ 16:00	長崎県	Nagasaki (Ohmura)	0.029
43	3/24 15:00 ~ 16:00	熊本県	Kumamoto (Uto)	0.027
44	3/24 15:00 ~ 16:00	大分県	Oita (Oita)	0.049
45	3/24 15:00 ~ 16:00	宮崎県	Miyazaki (Miyazaki)	0.026
46	3/24 15:00 ~ 16:00	鹿児島県	Kagoshima (Kagosh	0.034
47	3/24 15:00 ~ 16:00	沖縄県	Okinawa (Uruma)	0.022
1	3/24 16:00 ~ 17:00	北海道	Hokkaido (Sapporo)	0.028
2	3/24 16:00 ~ 17:00	青森県	Aomori (Aomori)	0.024
3	3/24 16:00 ~ 17:00	岩手県	Iwate (Morioka)	0.034
4	3/24 16:00 ~ 17:00	宮城県	Miyagi (Sendai)	
5	3/24 16:00 ~ 17:00	秋田県	Akita (Akita)	0.035
6	3/24 16:00 ~ 17:00	山形県	Yamagata (Yamaga	0.082
7	3/24 16:00 ~ 17:00	福島県	Fukushima (Futaba-gun)	
8	3/24 16:00 ~ 17:00	茨城県	Ibaraki (Mito)	0.297
9	3/24 16:00 ~ 17:00	栃木県	Tochigi (Itsunomiya	0.13
10	3/24 16:00 ~ 17:00	群馬県	Gunma (Maebashi)	0.087
11	3/24 16:00 ~ 17:00	埼玉県	Saitama (Saitama)	0.113
12	3/24 16:00 ~ 17:00	千葉県	Chiba (Ichihara)	0.096
13	3/24 16:00 ~ 17:00	東京都	Tokyo (Shinjuku-kı	0.136
14	3/24 16:00 ~ 17:00	神奈川県	Kanagawa (Chigasa	0.092
15	3/24 16:00 ~ 17:00	新潟県	Niigata (Niigata)	0.046
16	3/24 16:00 ~ 17:00	富山県	Toyama (Imizu)	0.054
17	3/24 16:00 ~ 17:00	石川県	Ishikawa (Kanazawa	0.053
18	3/24 16:00 ~ 17:00	福井県	Fukui (Fukui)	0.049
19	3/24 16:00 ~ 17:00	山梨県	Yamanashi (Kofu)	0.046
20	3/24 16:00 ~ 17:00	長野県	Nagano (Nagano)	0.05
21	3/24 16:00 ~ 17:00	岐阜県	Gifu (Kakamigahara	0.062
22	3/24 16:00 ~ 17:00	静岡県	Shizuoka (Shizuoka	0.048
23	3/24 16:00 ~ 17:00	愛知県	Aichi (Nagoya)	0.04
24	3/24 16:00 ~ 17:00	三重県	Mie (Yokkaichi)	0.047
25	3/24 16:00 ~ 17:00	滋賀県	Shiga (Ohtsu)	0.035
26	3/24 16:00 ~ 17:00	京都府	Kyoto (Kyoto)	0.039
27	3/24 16:00 ~ 17:00	大阪府	Osaka (Osaka)	0.043
28	3/24 16:00 ~ 17:00	兵庫県	Hyogo (Kobe)	0.037
29	3/24 16:00 ~ 17:00	奈良県	Nara (Nara)	0.047
30	3/24 16:00 ~ 17:00	和歌山県	Wakayama (Wakaya	0.032
31	3/24 16:00 ~ 17:00	鳥取県	Tottori (Touhaku-g	0.063

32	3/24 16:00 ~ 17:00	島根県	Shimane (Matsue)	0.036
33	3/24 16:00 ~ 17:00	岡山県	Okayama (Okayama	0.048
34	3/24 16:00 ~ 17:00	広島県	Hiroshima (Hiroshin	0.046
35	3/24 16:00 ~ 17:00	山口県	Yamaguchi (Yamagu	0.091
36	3/24 16:00 ~ 17:00	徳島県	Tokushima (Tokush	0.038
37	3/24 16:00 ~ 17:00	香川県	Kagawa (Takamatsu	0.054
38	3/24 16:00 ~ 17:00	愛媛県	Ehime (Matsuyama)	0.047
39	3/24 16:00 ~ 17:00	高知県	Kochi (Kochi)	0.025
40	3/24 16:00 ~ 17:00	福岡県	Fukuoka (Dazaifu)	0.036
41	3/24 16:00 ~ 17:00	佐賀県	Saga (Saga)	0.04
42	3/24 16:00 ~ 17:00	長崎県	Nagasaki (Ohmura)	0.029
43	3/24 16:00 ~ 17:00	熊本県	Kumamoto (Uto)	0.027
44	3/24 16:00 ~ 17:00	大分県	Oita (Oita)	0.05
45	3/24 16:00 ~ 17:00	宮崎県	Miyazaki (Miyazaki)	0.026
46	3/24 16:00 ~ 17:00	鹿児島県	Kagoshima (Kagosh	0.034
47	3/24 16:00 ~ 17:00	沖縄県	Okinawa (Uruma)	0.021
1	3/24 17:00 ~ 18:00	北海道	Hokkaido (Sapporo)	0.028
2	3/24 17:00 ~ 18:00	青森県	Aomori (Aomori)	0.024
3	3/24 17:00 ~ 18:00	岩手県	Iwate (Morioka)	0.033
4	3/24 17:00 ~ 18:00	宮城県	Miyagi (Sendai)	
5	3/24 17:00 ~ 18:00	秋田県	Akita (Akita)	0.034
6	3/24 17:00 ~ 18:00	山形県	Yamagata (Yamaga	0.082
7	3/24 17:00 ~ 18:00	福島県	Fukushima (Futaba-gun)	
8	3/24 17:00 ~ 18:00	茨城県	Ibaraki (Mito)	0.298
9	3/24 17:00 ~ 18:00	栃木県	Tochigi (Itsunomiya	0.13
10	3/24 17:00 ~ 18:00	群馬県	Gunma (Maebashi)	0.087
11	3/24 17:00 ~ 18:00	埼玉県	Saitama (Saitama)	0.113
12	3/24 17:00 ~ 18:00	千葉県	Chiba (Ichihara)	0.096
13	3/24 17:00 ~ 18:00	東京都	Tokyo (Shinjuku-ku	0.135
14	3/24 17:00 ~ 18:00	神奈川県	Kanagawa (Chigasa	0.091
15	3/24 17:00 ~ 18:00	新潟県	Niigata (Niigata)	0.046
16	3/24 17:00 ~ 18:00	富山県	Toyama (Imizu)	0.052
17	3/24 17:00 ~ 18:00	石川県	Ishikawa (Kanazawa	0.052
18	3/24 17:00 ~ 18:00	福井県	Fukui (Fukui)	0.049
19	3/24 17:00 ~ 18:00	山梨県	Yamanashi (Kofu)	0.045
20	3/24 17:00 ~ 18:00	長野県	Nagano (Nagano)	0.051
21	3/24 17:00 ~ 18:00	岐阜県	Gifu (Kakamigahara	0.063
22	3/24 17:00 ~ 18:00	静岡県	Shizuoka (Shizuoka	0.047
23	3/24 17:00 ~ 18:00	愛知県	Aichi (Nagoya)	0.04
24	3/24 17:00 ~ 18:00	三重県	Mie (Yokkaichi)	0.047
25	3/24 17:00 ~ 18:00	滋賀県	Shiga (Ohtsu)	0.034
26	3/24 17:00 ~ 18:00	京都府	Kyoto (Kyoto)	0.039
27	3/24 17:00 ~ 18:00	大阪府	Osaka (Osaka)	0.043
28	3/24 17:00 ~ 18:00	兵庫県	Hyogo (Kobe)	0.037
29	3/24 17:00 ~ 18:00	奈良県	Nara (Nara)	0.047
30	3/24 17:00 ~ 18:00	和歌山県	Wakayama (Wakaya	0.032
31	3/24 17:00 ~ 18:00	鳥取県	Tottori (Touhaku-g	0.063
32	3/24 17:00 ~ 18:00	島根県	Shimane (Matsue)	0.036
33	3/24 17:00 ~ 18:00	岡山県	Okayama (Okayama	0.048
34	3/24 17:00 ~ 18:00	広島県	Hiroshima (Hiroshin	0.046
35	3/24 17:00 ~ 18:00	山口県	Yamaguchi (Yamagu	0.09
36	3/24 17:00 ~ 18:00	徳島県	Tokushima (Tokush	0.037
37	3/24 17:00 ~ 18:00	香川県	Kagawa (Takamatsu	0.059
38	3/24 17:00 ~ 18:00	愛媛県	Ehime (Matsuyama)	0.047
39	3/24 17:00 ~ 18:00	高知県	Kochi (Kochi)	0.025
40	3/24 17:00 ~ 18:00	福岡県	Fukuoka (Dazaifu)	0.036
41	3/24 17:00 ~ 18:00	佐賀県	Saga (Saga)	0.04

42	3/24 17:00 ~ 18:00	長崎県	Nagasaki (Ohmura)	0.029
43	3/24 17:00 ~ 18:00	熊本県	Kumamoto (Uto)	0.027
44	3/24 17:00 ~ 18:00	大分県	Oita (Oita)	0.049
45	3/24 17:00 ~ 18:00	宮崎県	Miyazaki (Miyazaki)	0.026
46	3/24 17:00 ~ 18:00	鹿児島県	Kagoshima (Kagosh	0.034
47	3/24 17:00 ~ 18:00	沖縄県	Okinawa (Uruma)	0.021
1	3/24 18:00 ~ 19:00	北海道	Hokkaido (Sapporo)	0.028
2	3/24 18:00 ~ 19:00	青森県	Aomori (Aomori)	0.025
3	3/24 18:00 ~ 19:00	岩手県	Iwate (Morioka)	0.031
4	3/24 18:00 ~ 19:00	宮城県	Miyagi (Sendai)	
5	3/24 18:00 ~ 19:00	秋田県	Akita (Akita)	0.034
6	3/24 18:00 ~ 19:00	山形県	Yamagata (Yamaga	0.081
7	3/24 18:00 ~ 19:00	福島県	Fukushima (Futaba-gun)	
8	3/24 18:00 ~ 19:00	茨城県	Ibaraki (Mito)	0.297
9	3/24 18:00 ~ 19:00	栃木県	Tochigi (Itsunomiya	0.13
10	3/24 18:00 ~ 19:00	群馬県	Gunma (Maebashi)	0.087
11	3/24 18:00 ~ 19:00	埼玉県	Saitama (Saitama)	0.114
12	3/24 18:00 ~ 19:00	千葉県	Chiba (Ichihara)	0.096
13	3/24 18:00 ~ 19:00	東京都	Tokyo (Shinjuku-ku	0.134
14	3/24 18:00 ~ 19:00	神奈川県	Kanagawa (Chigasa	0.092
15	3/24 18:00 ~ 19:00	新潟県	Niigata (Niigata)	0.047
16	3/24 18:00 ~ 19:00	富山県	Toyama (Imizu)	0.05
17	3/24 18:00 ~ 19:00	石川県	Ishikawa (Kanazawa	0.049
18	3/24 18:00 ~ 19:00	福井県	Fukui (Fukui)	0.052
19	3/24 18:00 ~ 19:00	山梨県	Yamanashi (Kofu)	0.046
20	3/24 18:00 ~ 19:00	長野県	Nagano (Nagano)	0.051
21	3/24 18:00 ~ 19:00	岐阜県	Gifu (Kakamigahara	0.064
22	3/24 18:00 ~ 19:00	静岡県	Shizuoka (Shizuoka	0.047
23	3/24 18:00 ~ 19:00	愛知県	Aichi (Nagoya)	0.039
24	3/24 18:00 ~ 19:00	三重県	Mie (Yokkaichi)	0.047
25	3/24 18:00 ~ 19:00	滋賀県	Shiga (Ohtsu)	0.034
26	3/24 18:00 ~ 19:00	京都府	Kyoto (Kyoto)	0.038
27	3/24 18:00 ~ 19:00	大阪府	Osaka (Osaka)	0.043
28	3/24 18:00 ~ 19:00	兵庫県	Hyogo (Kobe)	0.037
29	3/24 18:00 ~ 19:00	奈良県	Nara (Nara)	0.048
30	3/24 18:00 ~ 19:00	和歌山県	Wakayama (Wakaya	0.032
31	3/24 18:00 ~ 19:00	鳥取県	Tottori (Touhaku-g	0.063
32	3/24 18:00 ~ 19:00	島根県	Shimane (Matsue)	0.036
33	3/24 18:00 ~ 19:00	岡山県	Okayama (Okayama	0.048
34	3/24 18:00 ~ 19:00	広島県	Hiroshima (Hiroshin	0.046
35	3/24 18:00 ~ 19:00	山口県	Yamaguchi (Yamagu	0.091
36	3/24 18:00 ~ 19:00	徳島県	Tokushima (Tokush	0.037
37	3/24 18:00 ~ 19:00	香川県	Kagawa (Takamatsu	0.061
38	3/24 18:00 ~ 19:00	愛媛県	Ehime (Matsuyama)	0.047
39	3/24 18:00 ~ 19:00	高知県	Kochi (Kochi)	0.025
40	3/24 18:00 ~ 19:00	福岡県	Fukuoka (Dazaifu)	0.036
41	3/24 18:00 ~ 19:00	佐賀県	Saga (Saga)	0.04
42	3/24 18:00 ~ 19:00	長崎県	Nagasaki (Ohmura)	0.029
43	3/24 18:00 ~ 19:00	熊本県	Kumamoto (Uto)	0.027
44	3/24 18:00 ~ 19:00	大分県	Oita (Oita)	0.05
45	3/24 18:00 ~ 19:00	宮崎県	Miyazaki (Miyazaki)	0.026
46	3/24 18:00 ~ 19:00	鹿児島県	Kagoshima (Kagosh	0.034
47	3/24 18:00 ~ 19:00	沖縄県	Okinawa (Uruma)	0.021
1	3/24 19:00 ~ 20:00	北海道	Hokkaido (Sapporo)	0.028
2	3/24 19:00 ~ 20:00	青森県	Aomori (Aomori)	0.023
3	3/24 19:00 ~ 20:00	岩手県	Iwate (Morioka)	0.031
4	3/24 19:00 ~ 20:00	宮城県	Miyagi (Sendai)	

5	3/24 19:00 ~ 20:00	秋田県	Akita (Akita)	0.034
6	3/24 19:00 ~ 20:00	山形県	Yamagata (Yamaga	0.081
7	3/24 19:00 ~ 20:00	福島県	Fukushima (Futaba-gun)	
8	3/24 19:00 ~ 20:00	茨城県	Ibaraki (Mito)	0.296
9	3/24 19:00 ~ 20:00	栃木県	Tochigi (Itsunomiya	0.13
10	3/24 19:00 ~ 20:00	群馬県	Gunma (Maebashi)	0.087
11	3/24 19:00 ~ 20:00	埼玉県	Saitama (Saitama)	0.113
12	3/24 19:00 ~ 20:00	千葉県	Chiba (Ichihara)	0.095
13	3/24 19:00 ~ 20:00	東京都	Tokyo (Shinjuku-ku	0.134
14	3/24 19:00 ~ 20:00	神奈川県	Kanagawa (Chigasa	0.091
15	3/24 19:00 ~ 20:00	新潟県	Niigata (Niigata)	0.049
16	3/24 19:00 ~ 20:00	富山県	Toyama (Imizu)	0.048
17	3/24 19:00 ~ 20:00	石川県	Ishikawa (Kanazawa	0.049
18	3/24 19:00 ~ 20:00	福井県	Fukui (Fukui)	0.049
19	3/24 19:00 ~ 20:00	山梨県	Yamanashi (Kofu)	0.046
20	3/24 19:00 ~ 20:00	長野県	Nagano (Nagano)	0.051
21	3/24 19:00 ~ 20:00	岐阜県	Gifu (Kakamigahara	0.064
22	3/24 19:00 ~ 20:00	静岡県	Shizuoka (Shizuoka	0.046
23	3/24 19:00 ~ 20:00	愛知県	Aichi (Nagoya)	0.039
24	3/24 19:00 ~ 20:00	三重県	Mie (Yokkaichi)	0.047
25	3/24 19:00 ~ 20:00	滋賀県	Shiga (Ohtsu)	0.033
26	3/24 19:00 ~ 20:00	京都府	Kyoto (Kyoto)	0.038
27	3/24 19:00 ~ 20:00	大阪府	Osaka (Osaka)	0.043
28	3/24 19:00 ~ 20:00	兵庫県	Hyogo (Kobe)	0.037
29	3/24 19:00 ~ 20:00	奈良県	Nara (Nara)	0.048
30	3/24 19:00 ~ 20:00	和歌山県	Wakayama (Wakaya	0.032
31	3/24 19:00 ~ 20:00	鳥取県	Tottori (Touhaku-g	0.063
32	3/24 19:00 ~ 20:00	島根県	Shimane (Matsue)	0.036
33	3/24 19:00 ~ 20:00	岡山県	Okayama (Okayama	0.048
34	3/24 19:00 ~ 20:00	広島県	Hiroshima (Hiroshin	0.047
35	3/24 19:00 ~ 20:00	山口県	Yamaguchi (Yamagı	0.091
36	3/24 19:00 ~ 20:00	徳島県	Tokushima (Tokush	0.038
37	3/24 19:00 ~ 20:00	香川県	Kagawa (Takamatsı	0.066
38	3/24 19:00 ~ 20:00	愛媛県	Ehime (Matsuyama	0.048
39	3/24 19:00 ~ 20:00	高知県	Kochi (Kochi)	0.025
40	3/24 19:00 ~ 20:00	福岡県	Fukuoka (Dazaifu)	0.036
41	3/24 19:00 ~ 20:00	佐賀県	Saga (Saga)	0.04
42	3/24 19:00 ~ 20:00	長崎県	Nagasaki (Ohmura)	0.029
43	3/24 19:00 ~ 20:00	熊本県	Kumamoto (Uto)	0.027
44	3/24 19:00 ~ 20:00	大分県	Oita (Oita)	0.05
45	3/24 19:00 ~ 20:00	宮崎県	Miyazaki (Miyazaki)	0.026
46	3/24 19:00 ~ 20:00	鹿児島県	Kagoshima (Kagosh	0.034
47	3/24 19:00 ~ 20:00	沖縄県	Okinawa (Uruma)	0.021
1	3/24 20:00 ~ 21:00	北海道	Hokkaido (Sapporo	0.028
2	3/24 20:00 ~ 21:00	青森県	Aomori (Aomori)	0.023
3	3/24 20:00 ~ 21:00	岩手県	Iwate (Morioka)	0.03
4	3/24 20:00 ~ 21:00	宮城県	Miyagi (Sendai)	
5	3/24 20:00 ~ 21:00	秋田県	Akita (Akita)	0.034
6	3/24 20:00 ~ 21:00	山形県	Yamagata (Yamaga	0.081
7	3/24 20:00 ~ 21:00	福島県	Fukushima (Futaba-gun)	
8	3/24 20:00 ~ 21:00	茨城県	Ibaraki (Mito)	0.295
9	3/24 20:00 ~ 21:00	栃木県	Tochigi (Itsunomiya	0.129
10	3/24 20:00 ~ 21:00	群馬県	Gunma (Maebashi)	0.087
11	3/24 20:00 ~ 21:00	埼玉県	Saitama (Saitama)	0.113
12	3/24 20:00 ~ 21:00	千葉県	Chiba (Ichihara)	0.094
13	3/24 20:00 ~ 21:00	東京都	Tokyo (Shinjuku-ku	0.134
14	3/24 20:00 ~ 21:00	神奈川県	Kanagawa (Chigasa	0.092

15	3/24 20:00 ~ 21:00	新潟県	Niigata (Niigata)	0.053
16	3/24 20:00 ~ 21:00	富山県	Toyama (Imizu)	0.051
17	3/24 20:00 ~ 21:00	石川県	Ishikawa (Kanazawa	0.052
18	3/24 20:00 ~ 21:00	福井県	Fukui (Fukui)	0.052
19	3/24 20:00 ~ 21:00	山梨県	Yamanashi (Kofu)	0.046
20	3/24 20:00 ~ 21:00	長野県	Nagano (Nagano)	0.05
21	3/24 20:00 ~ 21:00	岐阜県	Gifu (Kakamigahara	0.061
22	3/24 20:00 ~ 21:00	静岡県	Shizuoka (Shizuoka	0.047
23	3/24 20:00 ~ 21:00	愛知県	Aichi (Nagoya)	0.04
24	3/24 20:00 ~ 21:00	三重県	Mie (Yokkaichi)	0.046
25	3/24 20:00 ~ 21:00	滋賀県	Shiga (Ohtsu)	0.033
26	3/24 20:00 ~ 21:00	京都府	Kyoto (Kyoto)	0.038
27	3/24 20:00 ~ 21:00	大阪府	Osaka (Osaka)	0.043
28	3/24 20:00 ~ 21:00	兵庫県	Hyogo (Kobe)	0.037
29	3/24 20:00 ~ 21:00	奈良県	Nara (Nara)	0.048
30	3/24 20:00 ~ 21:00	和歌山県	Wakayama (Wakaya	0.032
31	3/24 20:00 ~ 21:00	鳥取県	Tottori (Touhaku-g	0.063
32	3/24 20:00 ~ 21:00	島根県	Shimane (Matsue)	0.036
33	3/24 20:00 ~ 21:00	岡山県	Okayama (Okayama	0.048
34	3/24 20:00 ~ 21:00	広島県	Hiroshima (Hiroshin	0.047
35	3/24 20:00 ~ 21:00	山口県	Yamaguchi (Yamagu	0.092
36	3/24 20:00 ~ 21:00	徳島県	Tokushima (Tokush	0.038
37	3/24 20:00 ~ 21:00	香川県	Kagawa (Takamatsu	0.068
38	3/24 20:00 ~ 21:00	愛媛県	Ehime (Matsuyama	0.048
39	3/24 20:00 ~ 21:00	高知県	Kochi (Kochi)	0.025
40	3/24 20:00 ~ 21:00	福岡県	Fukuoka (Dazaifu)	0.036
41	3/24 20:00 ~ 21:00	佐賀県	Saga (Saga)	0.04
42	3/24 20:00 ~ 21:00	長崎県	Nagasaki (Ohmura)	0.029
43	3/24 20:00 ~ 21:00	熊本県	Kumamoto (Uto)	0.027
44	3/24 20:00 ~ 21:00	大分県	Oita (Oita)	0.049
45	3/24 20:00 ~ 21:00	宮崎県	Miyazaki (Miyazaki)	0.027
46	3/24 20:00 ~ 21:00	鹿児島県	Kagoshima (Kagosh	0.035
47	3/24 20:00 ~ 21:00	沖縄県	Okinawa (Uruma)	0.021
1	3/24 21:00 ~ 22:00	北海道	Hokkaido (Sapporo	0.028
2	3/24 21:00 ~ 22:00	青森県	Aomori (Aomori)	0.023
3	3/24 21:00 ~ 22:00	岩手県	Iwate (Morioka)	0.031
4	3/24 21:00 ~ 22:00	宮城県	Miyagi (Sendai)	
5	3/24 21:00 ~ 22:00	秋田県	Akita (Akita)	0.034
6	3/24 21:00 ~ 22:00	山形県	Yamagata (Yamaga	0.082
7	3/24 21:00 ~ 22:00	福島県	Fukushima (Futaba-gun)	
8	3/24 21:00 ~ 22:00	茨城県	Ibaraki (Mito)	0.295
9	3/24 21:00 ~ 22:00	栃木県	Tochigi (Utsunomiya	0.129
10	3/24 21:00 ~ 22:00	群馬県	Gunma (Maebashi)	0.087
11	3/24 21:00 ~ 22:00	埼玉県	Saitama (Saitama)	0.113
12	3/24 21:00 ~ 22:00	千葉県	Chiba (Ichihara)	0.095
13	3/24 21:00 ~ 22:00	東京都	Tokyo (Shinjuku-ku	0.135
14	3/24 21:00 ~ 22:00	神奈川県	Kanagawa (Chigasa	0.091
15	3/24 21:00 ~ 22:00	新潟県	Niigata (Niigata)	0.061
16	3/24 21:00 ~ 22:00	富山県	Toyama (Imizu)	0.05
17	3/24 21:00 ~ 22:00	石川県	Ishikawa (Kanazawa	0.05
18	3/24 21:00 ~ 22:00	福井県	Fukui (Fukui)	0.051
19	3/24 21:00 ~ 22:00	山梨県	Yamanashi (Kofu)	0.046
20	3/24 21:00 ~ 22:00	長野県	Nagano (Nagano)	0.051
21	3/24 21:00 ~ 22:00	岐阜県	Gifu (Kakamigahara	0.06
22	3/24 21:00 ~ 22:00	静岡県	Shizuoka (Shizuoka	0.047
23	3/24 21:00 ~ 22:00	愛知県	Aichi (Nagoya)	0.039
24	3/24 21:00 ~ 22:00	三重県	Mie (Yokkaichi)	0.046

25	3/24 21:00 ~ 22:00	滋賀県	Shiga (Ohtsu)	0.033
26	3/24 21:00 ~ 22:00	京都府	Kyoto (Kyoto)	0.038
27	3/24 21:00 ~ 22:00	大阪府	Osaka (Osaka)	0.042
28	3/24 21:00 ~ 22:00	兵庫県	Hyogo (Kobe)	0.037
29	3/24 21:00 ~ 22:00	奈良県	Nara (Nara)	0.048
30	3/24 21:00 ~ 22:00	和歌山県	Wakayama (Wakaya	0.031
31	3/24 21:00 ~ 22:00	鳥取県	Tottori (Touhaku-g	0.063
32	3/24 21:00 ~ 22:00	島根県	Shimane (Matsue)	0.037
33	3/24 21:00 ~ 22:00	岡山県	Okayama (Okayama	0.048
34	3/24 21:00 ~ 22:00	広島県	Hiroshima (Hiroshin	0.047
35	3/24 21:00 ~ 22:00	山口県	Yamaguchi (Yamagu	0.092
36	3/24 21:00 ~ 22:00	徳島県	Tokushima (Tokush	0.037
37	3/24 21:00 ~ 22:00	香川県	Kagawa (Takamatsu	0.063
38	3/24 21:00 ~ 22:00	愛媛県	Ehime (Matsuyama)	0.049
39	3/24 21:00 ~ 22:00	高知県	Kochi (Kochi)	0.025
40	3/24 21:00 ~ 22:00	福岡県	Fukuoka (Dazaifu)	0.036
41	3/24 21:00 ~ 22:00	佐賀県	Saga (Saga)	0.04
42	3/24 21:00 ~ 22:00	長崎県	Nagasaki (Ohmura)	0.029
43	3/24 21:00 ~ 22:00	熊本県	Kumamoto (Uto)	0.027
44	3/24 21:00 ~ 22:00	大分県	Oita (Oita)	0.05
45	3/24 21:00 ~ 22:00	宮崎県	Miyazaki (Miyazaki)	0.027
46	3/24 21:00 ~ 22:00	鹿児島県	Kagoshima (Kagosh	0.035
47	3/24 21:00 ~ 22:00	沖縄県	Okinawa (Uruma)	0.021
1	3/24 22:00 ~ 23:00	北海道	Hokkaido (Sapporo)	0.028
2	3/24 22:00 ~ 23:00	青森県	Aomori (Aomori)	0.023
3	3/24 22:00 ~ 23:00	岩手県	Iwate (Morioka)	0.031
4	3/24 22:00 ~ 23:00	宮城県	Miyagi (Sendai)	
5	3/24 22:00 ~ 23:00	秋田県	Akita (Akita)	0.034
6	3/24 22:00 ~ 23:00	山形県	Yamagata (Yamaga	0.082
7	3/24 22:00 ~ 23:00	福島県	Fukushima (Futaba-gun)	
8	3/24 22:00 ~ 23:00	茨城県	Ibaraki (Mito)	0.294
9	3/24 22:00 ~ 23:00	栃木県	Tochigi (Itsunomiya	0.129
10	3/24 22:00 ~ 23:00	群馬県	Gunma (Maebashi)	0.086
11	3/24 22:00 ~ 23:00	埼玉県	Saitama (Saitama)	0.114
12	3/24 22:00 ~ 23:00	千葉県	Chiba (Ichihara)	0.094
13	3/24 22:00 ~ 23:00	東京都	Tokyo (Shinjuku-ku	0.135
14	3/24 22:00 ~ 23:00	神奈川県	Kanagawa (Chigasa	0.092
15	3/24 22:00 ~ 23:00	新潟県	Niigata (Niigata)	0.054
16	3/24 22:00 ~ 23:00	富山県	Toyama (Imizu)	0.05
17	3/24 22:00 ~ 23:00	石川県	Ishikawa (Kanazawa	0.05
18	3/24 22:00 ~ 23:00	福井県	Fukui (Fukui)	0.054
19	3/24 22:00 ~ 23:00	山梨県	Yamanashi (Kofu)	0.046
20	3/24 22:00 ~ 23:00	長野県	Nagano (Nagano)	0.052
21	3/24 22:00 ~ 23:00	岐阜県	Gifu (Kakamigahara	0.061
22	3/24 22:00 ~ 23:00	静岡県	Shizuoka (Shizuoka	0.046
23	3/24 22:00 ~ 23:00	愛知県	Aichi (Nagoya)	0.039
24	3/24 22:00 ~ 23:00	三重県	Mie (Yokkaichi)	0.046
25	3/24 22:00 ~ 23:00	滋賀県	Shiga (Ohtsu)	0.033
26	3/24 22:00 ~ 23:00	京都府	Kyoto (Kyoto)	0.038
27	3/24 22:00 ~ 23:00	大阪府	Osaka (Osaka)	0.042
28	3/24 22:00 ~ 23:00	兵庫県	Hyogo (Kobe)	0.037
29	3/24 22:00 ~ 23:00	奈良県	Nara (Nara)	0.048
30	3/24 22:00 ~ 23:00	和歌山県	Wakayama (Wakaya	0.032
31	3/24 22:00 ~ 23:00	鳥取県	Tottori (Touhaku-g	0.063
32	3/24 22:00 ~ 23:00	島根県	Shimane (Matsue)	0.037
33	3/24 22:00 ~ 23:00	岡山県	Okayama (Okayama	0.048
34	3/24 22:00 ~ 23:00	広島県	Hiroshima (Hiroshin	0.048

35	3/24 22:00 ~ 23:00	山口県	Yamaguchi (Yamagı	0.093
36	3/24 22:00 ~ 23:00	徳島県	Tokushima (Tokush	0.038
37	3/24 22:00 ~ 23:00	香川県	Kagawa (Takamatsı	0.064
38	3/24 22:00 ~ 23:00	愛媛県	Ehime (Matsuyama)	0.049
39	3/24 22:00 ~ 23:00	高知県	Kochi (Kochi)	0.026
40	3/24 22:00 ~ 23:00	福岡県	Fukuoka (Dazaifu)	0.037
41	3/24 22:00 ~ 23:00	佐賀県	Saga (Saga)	0.04
42	3/24 22:00 ~ 23:00	長崎県	Nagasaki (Ohmura)	0.029
43	3/24 22:00 ~ 23:00	熊本県	Kumamoto (Uto)	0.028
44	3/24 22:00 ~ 23:00	大分県	Oita (Oita)	0.05
45	3/24 22:00 ~ 23:00	宮崎県	Miyazaki (Miyazaki)	0.027
46	3/24 22:00 ~ 23:00	鹿児島県	Kagoshima (Kagosh	0.035
47	3/24 22:00 ~ 23:00	沖縄県	Okinawa (Uruma)	0.021
1	3/25 23:00 ~ 24:00	北海道	Hokkaido (Sapporo)	0.028
2	3/25 23:00 ~ 24:00	青森県	Aomori (Aomori)	0.023
3	3/25 23:00 ~ 24:00	岩手県	Iwate (Morioka)	0.03
4	3/25 23:00 ~ 24:00	宮城県	Miyagi (Sendai)	
5	3/25 23:00 ~ 24:00	秋田県	Akita (Akita)	0.035
6	3/25 23:00 ~ 24:00	山形県	Yamagata (Yamaga	0.082
7	3/25 23:00 ~ 24:00	福島県	Fukushima (Futaba-gun)	
8	3/25 23:00 ~ 24:00	茨城県	Ibaraki (Mito)	0.293
9	3/25 23:00 ~ 24:00	栃木県	Tochigi (Itsunomiya	0.129
10	3/25 23:00 ~ 24:00	群馬県	Gunma (Maebashi)	0.087
11	3/25 23:00 ~ 24:00	埼玉県	Saitama (Saitama)	0.113
12	3/25 23:00 ~ 24:00	千葉県	Chiba (Ichihara)	0.095
13	3/25 23:00 ~ 24:00	東京都	Tokyo (Shinjuku-kı	0.134
14	3/25 23:00 ~ 24:00	神奈川県	Kanagawa (Chigasa	0.091
15	3/25 23:00 ~ 24:00	新潟県	Niigata (Niigata)	0.049
16	3/25 23:00 ~ 24:00	富山県	Toyama (Imizu)	0.05
17	3/25 23:00 ~ 24:00	石川県	Ishikawa (Kanazawa	0.051
18	3/25 23:00 ~ 24:00	福井県	Fukui (Fukui)	0.051
19	3/25 23:00 ~ 24:00	山梨県	Yamanashi (Kofu)	0.046
20	3/25 23:00 ~ 24:00	長野県	Nagano (Nagano)	0.051
21	3/25 23:00 ~ 24:00	岐阜県	Gifu (Kakamigahara	0.06
22	3/25 23:00 ~ 24:00	静岡県	Shizuoka (Shizuoka	0.046
23	3/25 23:00 ~ 24:00	愛知県	Aichi (Nagoya)	0.04
24	3/25 23:00 ~ 24:00	三重県	Mie (Yokkaichi)	0.046
25	3/25 23:00 ~ 24:00	滋賀県	Shiga (Ohtsu)	0.034
26	3/25 23:00 ~ 24:00	京都府	Kyoto (Kyoto)	0.038
27	3/25 23:00 ~ 24:00	大阪府	Osaka (Osaka)	0.042
28	3/25 23:00 ~ 24:00	兵庫県	Hyogo (Kobe)	0.036
29	3/25 23:00 ~ 24:00	奈良県	Nara (Nara)	0.048
30	3/25 23:00 ~ 24:00	和歌山県	Wakayama (Wakaya	0.032
31	3/25 23:00 ~ 24:00	鳥取県	Tottori (Touhaku-g	0.063
32	3/25 23:00 ~ 24:00	島根県	Shimane (Matsue)	0.037
33	3/25 23:00 ~ 24:00	岡山県	Okayama (Okayama	0.049
34	3/25 23:00 ~ 24:00	広島県	Hiroshima (Hiroshin	0.049
35	3/25 23:00 ~ 24:00	山口県	Yamaguchi (Yamagı	0.093
36	3/25 23:00 ~ 24:00	徳島県	Tokushima (Tokush	0.038
37	3/25 23:00 ~ 24:00	香川県	Kagawa (Takamatsı	0.069
38	3/25 23:00 ~ 24:00	愛媛県	Ehime (Matsuyama)	0.05
39	3/25 23:00 ~ 24:00	高知県	Kochi (Kochi)	0.026
40	3/25 23:00 ~ 24:00	福岡県	Fukuoka (Dazaifu)	0.037
41	3/25 23:00 ~ 24:00	佐賀県	Saga (Saga)	0.04
42	3/25 23:00 ~ 24:00	長崎県	Nagasaki (Ohmura)	0.029
43	3/25 23:00 ~ 24:00	熊本県	Kumamoto (Uto)	0.028
44	3/25 23:00 ~ 24:00	大分県	Oita (Oita)	0.05

45	3/25 23:00 ˜ 24:00	宮崎県	Miyazaki (Miyazaki)	0.027
46	3/25 23:00 ˜ 24:00	鹿児島県	Kagoshima (Kagosh	0.035
47	3/25 23:00 ˜ 24:00	沖縄県	Okinawa (Uruma)	0.021
1	3/25 00:00 ˜ 01:00	北海道	Hokkaido (Sapporo)	0.028
2	3/25 00:00 ˜ 01:00	青森県	Aomori (Aomori)	0.023
3	3/25 00:00 ˜ 01:00	岩手県	Iwate (Morioka)	0.03
4	3/25 00:00 ˜ 01:00	宮城県	Miyagi (Sendai)	
5	3/25 00:00 ˜ 01:00	秋田県	Akita (Akita)	0.035
6	3/25 00:00 ˜ 01:00	山形県	Yamagata (Yamaga	0.082
7	3/25 00:00 ˜ 01:00	福島県	Fukushima (Futaba-gun)	
8	3/25 00:00 ˜ 01:00	茨城県	Ibaraki (Mito)	0.292
9	3/25 00:00 ˜ 01:00	栃木県	Tochigi (Itsunomiya	0.128
10	3/25 00:00 ˜ 01:00	群馬県	Gunma (Maebashi)	0.087
11	3/25 00:00 ˜ 01:00	埼玉県	Saitama (Saitama)	0.114
12	3/25 00:00 ˜ 01:00	千葉県	Chiba (Ichihara)	0.094
13	3/25 00:00 ˜ 01:00	東京都	Tokyo (Shinjuku-ku	0.134
14	3/25 00:00 ˜ 01:00	神奈川県	Kanagawa (Chigasa	0.091
15	3/25 00:00 ˜ 01:00	新潟県	Niigata (Niigata)	0.054
16	3/25 00:00 ˜ 01:00	富山県	Toyama (Imizu)	0.05
17	3/25 00:00 ˜ 01:00	石川県	Ishikawa (Kanazawa	0.052
18	3/25 00:00 ˜ 01:00	福井県	Fukui (Fukui)	0.047
19	3/25 00:00 ˜ 01:00	山梨県	Yamanashi (Kofu)	0.046
20	3/25 00:00 ˜ 01:00	長野県	Nagano (Nagano)	0.051
21	3/25 00:00 ˜ 01:00	岐阜県	Gifu (Kakamigahara	0.061
22	3/25 00:00 ˜ 01:00	静岡県	Shizuoka (Shizuoka	0.046
23	3/25 00:00 ˜ 01:00	愛知県	Aichi (Nagoya)	0.039
24	3/25 00:00 ˜ 01:00	三重県	Mie (Yokkaichi)	0.046
25	3/25 00:00 ˜ 01:00	滋賀県	Shiga (Ohtsu)	0.034
26	3/25 00:00 ˜ 01:00	京都府	Kyoto (Kyoto)	0.038
27	3/25 00:00 ˜ 01:00	大阪府	Osaka (Osaka)	0.042
28	3/25 00:00 ˜ 01:00	兵庫県	Hyogo (Kobe)	0.037
29	3/25 00:00 ˜ 01:00	奈良県	Nara (Nara)	0.048
30	3/25 00:00 ˜ 01:00	和歌山県	Wakayama (Wakaya	0.032
31	3/25 00:00 ˜ 01:00	鳥取県	Tottori (Touhaku-g	0.063
32	3/25 00:00 ˜ 01:00	島根県	Shimane (Matsue)	0.038
33	3/25 00:00 ˜ 01:00	岡山県	Okayama (Okayama	0.05
34	3/25 00:00 ˜ 01:00	広島県	Hiroshima (Hiroshin	0.049
35	3/25 00:00 ˜ 01:00	山口県	Yamaguchi (Yamagı	0.094
36	3/25 00:00 ˜ 01:00	徳島県	Tokushima (Tokush	0.038
37	3/25 00:00 ˜ 01:00	香川県	Kagawa (Takamatsı	0.072
38	3/25 00:00 ˜ 01:00	愛媛県	Ehime (Matsuyama)	0.049
39	3/25 00:00 ˜ 01:00	高知県	Kochi (Kochi)	0.026
40	3/25 00:00 ˜ 01:00	福岡県	Fukuoka (Dazaifu)	0.037
41	3/25 00:00 ˜ 01:00	佐賀県	Saga (Saga)	0.041
42	3/25 00:00 ˜ 01:00	長崎県	Nagasaki (Ohmura)	0.029
43	3/25 00:00 ˜ 01:00	熊本県	Kumamoto (Uto)	0.028
44	3/25 00:00 ˜ 01:00	大分県	Oita (Oita)	0.05
45	3/25 00:00 ˜ 01:00	宮崎県	Miyazaki (Miyazaki)	0.027
46	3/25 00:00 ˜ 01:00	鹿児島県	Kagoshima (Kagosh	0.035
47	3/25 00:00 ˜ 01:00	沖縄県	Okinawa (Uruma)	0.021
1	3/25 01:00 ˜ 02:00	北海道	Hokkaido (Sapporo)	0.029
2	3/25 01:00 ˜ 02:00	青森県	Aomori (Aomori)	0.023
3	3/25 01:00 ˜ 02:00	岩手県	Iwate (Morioka)	0.03
4	3/25 01:00 ˜ 02:00	宮城県	Miyagi (Sendai)	
5	3/25 01:00 ˜ 02:00	秋田県	Akita (Akita)	0.036
6	3/25 01:00 ˜ 02:00	山形県	Yamagata (Yamaga	0.082
7	3/25 01:00 ˜ 02:00	福島県	Fukushima (Futaba-gun)	

8	3/25 01:00 ~ 02:00	茨城県	Ibaraki (Mito)	0.292
9	3/25 01:00 ~ 02:00	栃木県	Tochigi (Itsunomiya	0.128
10	3/25 01:00 ~ 02:00	群馬県	Gunma (Maebashi)	0.087
11	3/25 01:00 ~ 02:00	埼玉県	Saitama (Saitama)	0.113
12	3/25 01:00 ~ 02:00	千葉県	Chiba (Ichihara)	0.094
13	3/25 01:00 ~ 02:00	東京都	Tokyo (Shinjuku-ku	0.134
14	3/25 01:00 ~ 02:00	神奈川県	Kanagawa (Chigasa	0.091
15	3/25 01:00 ~ 02:00	新潟県	Niigata (Niigata)	0.062
16	3/25 01:00 ~ 02:00	富山県	Toyama (Imizu)	0.049
17	3/25 01:00 ~ 02:00	石川県	Ishikawa (Kanazawa	0.049
18	3/25 01:00 ~ 02:00	福井県	Fukui (Fukui)	0.046
19	3/25 01:00 ~ 02:00	山梨県	Yamanashi (Kofu)	0.046
20	3/25 01:00 ~ 02:00	長野県	Nagano (Nagano)	0.052
21	3/25 01:00 ~ 02:00	岐阜県	Gifu (Kakamigahara	0.061
22	3/25 01:00 ~ 02:00	静岡県	Shizuoka (Shizuoka	0.046
23	3/25 01:00 ~ 02:00	愛知県	Aichi (Nagoya)	0.04
24	3/25 01:00 ~ 02:00	三重県	Mie (Yokkaichi)	0.046
25	3/25 01:00 ~ 02:00	滋賀県	Shiga (Ohtsu)	0.034
26	3/25 01:00 ~ 02:00	京都府	Kyoto (Kyoto)	0.039
27	3/25 01:00 ~ 02:00	大阪府	Osaka (Osaka)	0.043
28	3/25 01:00 ~ 02:00	兵庫県	Hyogo (Kobe)	0.037
29	3/25 01:00 ~ 02:00	奈良県	Nara (Nara)	0.048
30	3/25 01:00 ~ 02:00	和歌山県	Wakayama (Wakaya	0.032
31	3/25 01:00 ~ 02:00	鳥取県	Tottori (Touhaku-g	0.064
32	3/25 01:00 ~ 02:00	島根県	Shimane (Matsue)	0.037
33	3/25 01:00 ~ 02:00	岡山県	Okayama (Okayama	0.049
34	3/25 01:00 ~ 02:00	広島県	Hiroshima (Hiroshin	0.05
35	3/25 01:00 ~ 02:00	山口県	Yamaguchi (Yamagu	0.095
36	3/25 01:00 ~ 02:00	徳島県	Tokushima (Tokush	0.038
37	3/25 01:00 ~ 02:00	香川県	Kagawa (Takamatsu	0.072
38	3/25 01:00 ~ 02:00	愛媛県	Ehime (Matsuyama)	0.05
39	3/25 01:00 ~ 02:00	高知県	Kochi (Kochi)	0.027
40	3/25 01:00 ~ 02:00	福岡県	Fukuoka (Dazaifu)	0.038
41	3/25 01:00 ~ 02:00	佐賀県	Saga (Saga)	0.041
42	3/25 01:00 ~ 02:00	長崎県	Nagasaki (Ohmura)	0.029
43	3/25 01:00 ~ 02:00	熊本県	Kumamoto (Uto)	0.028
44	3/25 01:00 ~ 02:00	大分県	Oita (Oita)	0.051
45	3/25 01:00 ~ 02:00	宮崎県	Miyazaki (Miyazaki)	0.027
46	3/25 01:00 ~ 02:00	鹿児島県	Kagoshima (Kagosh	0.035
47	3/25 01:00 ~ 02:00	沖縄県	Okinawa (Uruma)	0.021
1	3/25 02:00 ~ 03:00	北海道	Hokkaido (Sapporo)	0.029
2	3/25 02:00 ~ 03:00	青森県	Aomori (Aomori)	0.023
3	3/25 02:00 ~ 03:00	岩手県	Iwate (Morioka)	0.031
4	3/25 02:00 ~ 03:00	宮城県	Miyagi (Sendai)	
5	3/25 02:00 ~ 03:00	秋田県	Akita (Akita)	0.036
6	3/25 02:00 ~ 03:00	山形県	Yamagata (Yamaga	0.082
7	3/25 02:00 ~ 03:00	福島県	Fukushima (Futaba-gun)	
8	3/25 02:00 ~ 03:00	茨城県	Ibaraki (Mito)	0.291
9	3/25 02:00 ~ 03:00	栃木県	Tochigi (Itsunomiya	0.128
10	3/25 02:00 ~ 03:00	群馬県	Gunma (Maebashi)	0.087
11	3/25 02:00 ~ 03:00	埼玉県	Saitama (Saitama)	0.113
12	3/25 02:00 ~ 03:00	千葉県	Chiba (Ichihara)	0.094
13	3/25 02:00 ~ 03:00	東京都	Tokyo (Shinjuku-ku	0.134
14	3/25 02:00 ~ 03:00	神奈川県	Kanagawa (Chigasa	0.091
15	3/25 02:00 ~ 03:00	新潟県	Niigata (Niigata)	0.055
16	3/25 02:00 ~ 03:00	富山県	Toyama (Imizu)	0.048
17	3/25 02:00 ~ 03:00	石川県	Ishikawa (Kanazawa	0.048

18	3/25 02:00 ~ 03:00	福井県	Fukui (Fukui)	0.046
19	3/25 02:00 ~ 03:00	山梨県	Yamanashi (Kofu)	0.047
20	3/25 02:00 ~ 03:00	長野県	Nagano (Nagano)	0.052
21	3/25 02:00 ~ 03:00	岐阜県	Gifu (Kakamigahara	0.062
22	3/25 02:00 ~ 03:00	静岡県	Shizuoka (Shizuoka	0.046
23	3/25 02:00 ~ 03:00	愛知県	Aichi (Nagoya)	0.04
24	3/25 02:00 ~ 03:00	三重県	Mie (Yokkaichi)	0.047
25	3/25 02:00 ~ 03:00	滋賀県	Shiga (Ohtsu)	0.034
26	3/25 02:00 ~ 03:00	京都府	Kyoto (Kyoto)	0.039
27	3/25 02:00 ~ 03:00	大阪府	Osaka (Osaka)	0.043
28	3/25 02:00 ~ 03:00	兵庫県	Hyogo (Kobe)	0.037
29	3/25 02:00 ~ 03:00	奈良県	Nara (Nara)	0.048
30	3/25 02:00 ~ 03:00	和歌山県	Wakayama (Wakaya	0.033
31	3/25 02:00 ~ 03:00	鳥取県	Tottori (Touhaku-g	0.064
32	3/25 02:00 ~ 03:00	島根県	Shimane (Matsue)	0.038
33	3/25 02:00 ~ 03:00	岡山県	Okayama (Okayam	0.05
34	3/25 02:00 ~ 03:00	広島県	Hiroshima (Hiroshin	0.05
35	3/25 02:00 ~ 03:00	山口県	Yamaguchi (Yamagı	0.095
36	3/25 02:00 ~ 03:00	徳島県	Tokushima (Tokush	0.039
37	3/25 02:00 ~ 03:00	香川県	Kagawa (Takamatsı	0.068
38	3/25 02:00 ~ 03:00	愛媛県	Ehime (Matsuyama	0.05
39	3/25 02:00 ~ 03:00	高知県	Kochi (Kochi)	0.027
40	3/25 02:00 ~ 03:00	福岡県	Fukuoka (Dazaifu)	0.037
41	3/25 02:00 ~ 03:00	佐賀県	Saga (Saga)	0.041
42	3/25 02:00 ~ 03:00	長崎県	Nagasaki (Ohmura)	0.029
43	3/25 02:00 ~ 03:00	熊本県	Kumamoto (Uto)	0.028
44	3/25 02:00 ~ 03:00	大分県	Oita (Oita)	0.051
45	3/25 02:00 ~ 03:00	宮崎県	Miyazaki (Miyazaki)	0.027
46	3/25 02:00 ~ 03:00	鹿児島県	Kagoshima (Kagosh	0.036
47	3/25 02:00 ~ 03:00	沖縄県	Okinawa (Uruma)	0.021
1	3/25 03:00 ~ 04:00	北海道	Hokkaido (Sapporo	0.029
2	3/25 03:00 ~ 04:00	青森県	Aomori (Aomori)	0.023
3	3/25 03:00 ~ 04:00	岩手県	Iwate (Morioka)	0.03
4	3/25 03:00 ~ 04:00	宮城県	Miyagi (Sendai)	
5	3/25 03:00 ~ 04:00	秋田県	Akita (Akita)	0.036
6	3/25 03:00 ~ 04:00	山形県	Yamagata (Yamaga	0.082
7	3/25 03:00 ~ 04:00	福島県	Fukushima (Futaba-gun)	
8	3/25 03:00 ~ 04:00	茨城県	Ibaraki (Mito)	0.291
9	3/25 03:00 ~ 04:00	栃木県	Tochigi (Itsunomiya	0.128
10	3/25 03:00 ~ 04:00	群馬県	Gunma (Maebashi)	0.086
11	3/25 03:00 ~ 04:00	埼玉県	Saitama (Saitama)	0.113
12	3/25 03:00 ~ 04:00	千葉県	Chiba (Ichihara)	0.094
13	3/25 03:00 ~ 04:00	東京都	Tokyo (Shinjuku-kı	0.133
14	3/25 03:00 ~ 04:00	神奈川県	Kanagawa (Chigasa	0.091
15	3/25 03:00 ~ 04:00	新潟県	Niigata (Niigata)	0.051
16	3/25 03:00 ~ 04:00	富山県	Toyama (Imizu)	0.048
17	3/25 03:00 ~ 04:00	石川県	Ishikawa (Kanazawa	0.046
18	3/25 03:00 ~ 04:00	福井県	Fukui (Fukui)	0.046
19	3/25 03:00 ~ 04:00	山梨県	Yamanashi (Kofu)	0.047
20	3/25 03:00 ~ 04:00	長野県	Nagano (Nagano)	0.052
21	3/25 03:00 ~ 04:00	岐阜県	Gifu (Kakamigahara	0.062
22	3/25 03:00 ~ 04:00	静岡県	Shizuoka (Shizuoka	0.046
23	3/25 03:00 ~ 04:00	愛知県	Aichi (Nagoya)	0.04
24	3/25 03:00 ~ 04:00	三重県	Mie (Yokkaichi)	0.046
25	3/25 03:00 ~ 04:00	滋賀県	Shiga (Ohtsu)	0.034
26	3/25 03:00 ~ 04:00	京都府	Kyoto (Kyoto)	0.039
27	3/25 03:00 ~ 04:00	大阪府	Osaka (Osaka)	0.043

28	3/25 03:00 ~ 04:00	兵庫県	Hyogo (Kobe)	0.037
29	3/25 03:00 ~ 04:00	奈良県	Nara (Nara)	0.049
30	3/25 03:00 ~ 04:00	和歌山県	Wakayama (Wakaya	0.033
31	3/25 03:00 ~ 04:00	鳥取県	Tottori (Touhaku-g	0.064
32	3/25 03:00 ~ 04:00	島根県	Shimane (Matsue)	0.038
33	3/25 03:00 ~ 04:00	岡山県	Okayama (Okayama	0.05
34	3/25 03:00 ~ 04:00	広島県	Hiroshima (Hiroshin	0.05
35	3/25 03:00 ~ 04:00	山口県	Yamaguchi (Yamagu	0.096
36	3/25 03:00 ~ 04:00	徳島県	Tokushima (Tokush	0.039
37	3/25 03:00 ~ 04:00	香川県	Kagawa (Takamatsu	0.073
38	3/25 03:00 ~ 04:00	愛媛県	Ehime (Matsuyama)	0.05
39	3/25 03:00 ~ 04:00	高知県	Kochi (Kochi)	0.028
40	3/25 03:00 ~ 04:00	福岡県	Fukuoka (Dazaifu)	0.037
41	3/25 03:00 ~ 04:00	佐賀県	Saga (Saga)	0.041
42	3/25 03:00 ~ 04:00	長崎県	Nagasaki (Ohmura)	0.029
43	3/25 03:00 ~ 04:00	熊本県	Kumamoto (Uto)	0.028
44	3/25 03:00 ~ 04:00	大分県	Oita (Oita)	0.051
45	3/25 03:00 ~ 04:00	宮崎県	Miyazaki (Miyazaki)	0.027
46	3/25 03:00 ~ 04:00	鹿児島県	Kagoshima (Kagosh	0.036
47	3/25 03:00 ~ 04:00	沖縄県	Okinawa (Uruma)	0.021
1	3/25 04:00 ~ 05:00	北海道	Hokkaido (Sapporo)	0.029
2	3/25 04:00 ~ 05:00	青森県	Aomori (Aomori)	0.024
3	3/25 04:00 ~ 05:00	岩手県	Iwate (Morioka)	0.031
4	3/25 04:00 ~ 05:00	宮城県	Miyagi (Sendai)	
5	3/25 04:00 ~ 05:00	秋田県	Akita (Akita)	0.036
6	3/25 04:00 ~ 05:00	山形県	Yamagata (Yamaga	0.082
7	3/25 04:00 ~ 05:00	福島県	Fukushima (Futaba-gun)	
8	3/25 04:00 ~ 05:00	茨城県	Ibaraki (Mito)	0.289
9	3/25 04:00 ~ 05:00	栃木県	Tochigi (Itsunomiya	0.128
10	3/25 04:00 ~ 05:00	群馬県	Gunma (Maebashi)	0.087
11	3/25 04:00 ~ 05:00	埼玉県	Saitama (Saitama)	0.113
12	3/25 04:00 ~ 05:00	千葉県	Chiba (Ichihara)	0.094
13	3/25 04:00 ~ 05:00	東京都	Tokyo (Shinjuku-ku	0.132
14	3/25 04:00 ~ 05:00	神奈川県	Kanagawa (Chigasa	0.091
15	3/25 04:00 ~ 05:00	新潟県	Niigata (Niigata)	0.059
16	3/25 04:00 ~ 05:00	富山県	Toyama (Imizu)	0.048
17	3/25 04:00 ~ 05:00	石川県	Ishikawa (Kanazawa	0.047
18	3/25 04:00 ~ 05:00	福井県	Fukui (Fukui)	0.046
19	3/25 04:00 ~ 05:00	山梨県	Yamanashi (Kofu)	0.047
20	3/25 04:00 ~ 05:00	長野県	Nagano (Nagano)	0.052
21	3/25 04:00 ~ 05:00	岐阜県	Gifu (Kakamigahara	0.063
22	3/25 04:00 ~ 05:00	静岡県	Shizuoka (Shizuoka	0.046
23	3/25 04:00 ~ 05:00	愛知県	Aichi (Nagoya)	0.041
24	3/25 04:00 ~ 05:00	三重県	Mie (Yokkaichi)	0.046
25	3/25 04:00 ~ 05:00	滋賀県	Shiga (Ohtsu)	0.034
26	3/25 04:00 ~ 05:00	京都府	Kyoto (Kyoto)	0.04
27	3/25 04:00 ~ 05:00	大阪府	Osaka (Osaka)	0.043
28	3/25 04:00 ~ 05:00	兵庫県	Hyogo (Kobe)	0.037
29	3/25 04:00 ~ 05:00	奈良県	Nara (Nara)	0.049
30	3/25 04:00 ~ 05:00	和歌山県	Wakayama (Wakaya	0.034
31	3/25 04:00 ~ 05:00	鳥取県	Tottori (Touhaku-g	0.064
32	3/25 04:00 ~ 05:00	島根県	Shimane (Matsue)	0.037
33	3/25 04:00 ~ 05:00	岡山県	Okayama (Okayama	0.051
34	3/25 04:00 ~ 05:00	広島県	Hiroshima (Hiroshin	0.051
35	3/25 04:00 ~ 05:00	山口県	Yamaguchi (Yamagu	0.097
36	3/25 04:00 ~ 05:00	徳島県	Tokushima (Tokush	0.039
37	3/25 04:00 ~ 05:00	香川県	Kagawa (Takamatsu	0.07

38	3/25 04:00 ~ 05:00	愛媛県	Ehime (Matsuyama,	0.05
39	3/25 04:00 ~ 05:00	高知県	Kochi (Kochi)	0.028
40	3/25 04:00 ~ 05:00	福岡県	Fukuoka (Dazaifu)	0.038
41	3/25 04:00 ~ 05:00	佐賀県	Saga (Saga)	0.043
42	3/25 04:00 ~ 05:00	長崎県	Nagasaki (Ohmura)	0.029
43	3/25 04:00 ~ 05:00	熊本県	Kumamoto (Uto)	0.028
44	3/25 04:00 ~ 05:00	大分県	Oita (Oita)	0.05
45	3/25 04:00 ~ 05:00	宮崎県	Miyazaki (Miyazaki)	0.027
46	3/25 04:00 ~ 05:00	鹿児島県	Kagoshima (Kagosh	0.036
47	3/25 04:00 ~ 05:00	沖縄県	Okinawa (Uruma)	0.021
1	3/25 05:00 ~ 06:00	北海道	Hokkaido (Sapporo,	0.029
2	3/25 05:00 ~ 06:00	青森県	Aomori (Aomori)	0.027
3	3/25 05:00 ~ 06:00	岩手県	Iwate (Morioka)	0.031
4	3/25 05:00 ~ 06:00	宮城県	Miyagi (Sendai)	
5	3/25 05:00 ~ 06:00	秋田県	Akita (Akita)	0.036
6	3/25 05:00 ~ 06:00	山形県	Yamagata (Yamaga	0.081
7	3/25 05:00 ~ 06:00	福島県	Fukushima (Futaba-gun)	
8	3/25 05:00 ~ 06:00	茨城県	Ibaraki (Mito)	0.288
9	3/25 05:00 ~ 06:00	栃木県	Tochigi (Itsunomiya	0.128
10	3/25 05:00 ~ 06:00	群馬県	Gunma (Maebashi)	0.086
11	3/25 05:00 ~ 06:00	埼玉県	Saitama (Saitama)	0.113
12	3/25 05:00 ~ 06:00	千葉県	Chiba (Ichihara)	0.093
13	3/25 05:00 ~ 06:00	東京都	Tokyo (Shinjuku-ku	0.132
14	3/25 05:00 ~ 06:00	神奈川県	Kanagawa (Chigasa	0.091
15	3/25 05:00 ~ 06:00	新潟県	Niigata (Niigata)	0.063
16	3/25 05:00 ~ 06:00	富山県	Toyama (Imizu)	0.049
17	3/25 05:00 ~ 06:00	石川県	Ishikawa (Kanazawa	0.047
18	3/25 05:00 ~ 06:00	福井県	Fukui (Fukui)	0.046
19	3/25 05:00 ~ 06:00	山梨県	Yamanashi (Kofu)	0.046
20	3/25 05:00 ~ 06:00	長野県	Nagano (Nagano)	0.052
21	3/25 05:00 ~ 06:00	岐阜県	Gifu (Kakamigahara	0.063
22	3/25 05:00 ~ 06:00	静岡県	Shizuoka (Shizuoka	0.046
23	3/25 05:00 ~ 06:00	愛知県	Aichi (Nagoya)	0.041
24	3/25 05:00 ~ 06:00	三重県	Mie (Yokkaichi)	0.046
25	3/25 05:00 ~ 06:00	滋賀県	Shiga (Ohtsu)	0.034
26	3/25 05:00 ~ 06:00	京都府	Kyoto (Kyoto)	0.04
27	3/25 05:00 ~ 06:00	大阪府	Osaka (Osaka)	0.043
28	3/25 05:00 ~ 06:00	兵庫県	Hyogo (Kobe)	0.038
29	3/25 05:00 ~ 06:00	奈良県	Nara (Nara)	0.049
30	3/25 05:00 ~ 06:00	和歌山県	Wakayama (Wakaya	0.034
31	3/25 05:00 ~ 06:00	鳥取県	Tottori (Touhaku-g	0.064
32	3/25 05:00 ~ 06:00	島根県	Shimane (Matsue)	0.038
33	3/25 05:00 ~ 06:00	岡山県	Okayama (Okayama	0.051
34	3/25 05:00 ~ 06:00	広島県	Hiroshima (Hiroshin	0.051
35	3/25 05:00 ~ 06:00	山口県	Yamaguchi (Yamagu	0.098
36	3/25 05:00 ~ 06:00	徳島県	Tokushima (Tokush	0.039
37	3/25 05:00 ~ 06:00	香川県	Kagawa (Takamatsu	0.071
38	3/25 05:00 ~ 06:00	愛媛県	Ehime (Matsuyama,	0.049
39	3/25 05:00 ~ 06:00	高知県	Kochi (Kochi)	0.028
40	3/25 05:00 ~ 06:00	福岡県	Fukuoka (Dazaifu)	0.039
41	3/25 05:00 ~ 06:00	佐賀県	Saga (Saga)	0.045
42	3/25 05:00 ~ 06:00	長崎県	Nagasaki (Ohmura)	0.03
43	3/25 05:00 ~ 06:00	熊本県	Kumamoto (Uto)	0.029
44	3/25 05:00 ~ 06:00	大分県	Oita (Oita)	0.05
45	3/25 05:00 ~ 06:00	宮崎県	Miyazaki (Miyazaki)	0.027
46	3/25 05:00 ~ 06:00	鹿児島県	Kagoshima (Kagosh	0.036
47	3/25 05:00 ~ 06:00	沖縄県	Okinawa (Uruma)	0.021

1	3/25 06:00 ~ 07:00	北海道	Hokkaido (Sapporo)	0.029
2	3/25 06:00 ~ 07:00	青森県	Aomori (Aomori)	0.025
3	3/25 06:00 ~ 07:00	岩手県	Iwate (Morioka)	0.031
4	3/25 06:00 ~ 07:00	宮城県	Miyagi (Sendai)	
5	3/25 06:00 ~ 07:00	秋田県	Akita (Akita)	0.036
6	3/25 06:00 ~ 07:00	山形県	Yamagata (Yamaga	0.081
7	3/25 06:00 ~ 07:00	福島県	Fukushima (Futaba-gun)	
8	3/25 06:00 ~ 07:00	茨城県	Ibaraki (Mito)	0.288
9	3/25 06:00 ~ 07:00	栃木県	Tochigi (Itsunomiya	0.127
10	3/25 06:00 ~ 07:00	群馬県	Gunma (Maebashi)	0.085
11	3/25 06:00 ~ 07:00	埼玉県	Saitama (Saitama)	0.113
12	3/25 06:00 ~ 07:00	千葉県	Chiba (Ichihara)	0.093
13	3/25 06:00 ~ 07:00	東京都	Tokyo (Shinjuku-ku	0.132
14	3/25 06:00 ~ 07:00	神奈川県	Kanagawa (Chigasa	0.091
15	3/25 06:00 ~ 07:00	新潟県	Niigata (Niigata)	0.051
16	3/25 06:00 ~ 07:00	富山県	Toyama (Imizu)	0.049
17	3/25 06:00 ~ 07:00	石川県	Ishikawa (Kanazawa	0.047
18	3/25 06:00 ~ 07:00	福井県	Fukui (Fukui)	0.046
19	3/25 06:00 ~ 07:00	山梨県	Yamanashi (Kofu)	0.047
20	3/25 06:00 ~ 07:00	長野県	Nagano (Nagano)	0.052
21	3/25 06:00 ~ 07:00	岐阜県	Gifu (Kakamigahara	0.063
22	3/25 06:00 ~ 07:00	静岡県	Shizuoka (Shizuoka	0.046
23	3/25 06:00 ~ 07:00	愛知県	Aichi (Nagoya)	0.042
24	3/25 06:00 ~ 07:00	三重県	Mie (Yokkaichi)	0.046
25	3/25 06:00 ~ 07:00	滋賀県	Shiga (Ohtsu)	0.036
26	3/25 06:00 ~ 07:00	京都府	Kyoto (Kyoto)	0.041
27	3/25 06:00 ~ 07:00	大阪府	Osaka (Osaka)	0.044
28	3/25 06:00 ~ 07:00	兵庫県	Hyogo (Kobe)	0.037
29	3/25 06:00 ~ 07:00	奈良県	Nara (Nara)	0.049
30	3/25 06:00 ~ 07:00	和歌山県	Wakayama (Wakaya	0.034
31	3/25 06:00 ~ 07:00	鳥取県	Tottori (Touhaku-g	0.063
32	3/25 06:00 ~ 07:00	島根県	Shimane (Matsue)	0.041
33	3/25 06:00 ~ 07:00	岡山県	Okayama (Okayama	0.051
34	3/25 06:00 ~ 07:00	広島県	Hiroshima (Hiroshin	0.051
35	3/25 06:00 ~ 07:00	山口県	Yamaguchi (Yamagu	0.106
36	3/25 06:00 ~ 07:00	徳島県	Tokushima (Tokush	0.039
37	3/25 06:00 ~ 07:00	香川県	Kagawa (Takamatsu	0.067
38	3/25 06:00 ~ 07:00	愛媛県	Ehime (Matsuyama)	0.049
39	3/25 06:00 ~ 07:00	高知県	Kochi (Kochi)	0.028
40	3/25 06:00 ~ 07:00	福岡県	Fukuoka (Dazaifu)	0.04
41	3/25 06:00 ~ 07:00	佐賀県	Saga (Saga)	0.044
42	3/25 06:00 ~ 07:00	長崎県	Nagasaki (Ohmura)	0.03
43	3/25 06:00 ~ 07:00	熊本県	Kumamoto (Uto)	0.029
44	3/25 06:00 ~ 07:00	大分県	Oita (Oita)	0.05
45	3/25 06:00 ~ 07:00	宮崎県	Miyazaki (Miyazaki)	0.026
46	3/25 06:00 ~ 07:00	鹿児島県	Kagoshima (Kagosh	0.036
47	3/25 06:00 ~ 07:00	沖縄県	Okinawa (Uruma)	0.021
1	3/25 07:00 ~ 08:00	北海道	Hokkaido (Sapporo)	0.029
2	3/25 07:00 ~ 08:00	青森県	Aomori (Aomori)	0.024
3	3/25 07:00 ~ 08:00	岩手県	Iwate (Morioka)	0.031
4	3/25 07:00 ~ 08:00	宮城県	Miyagi (Sendai)	
5	3/25 07:00 ~ 08:00	秋田県	Akita (Akita)	0.035
6	3/25 07:00 ~ 08:00	山形県	Yamagata (Yamaga	0.08
7	3/25 07:00 ~ 08:00	福島県	Fukushima (Futaba-gun)	
8	3/25 07:00 ~ 08:00	茨城県	Ibaraki (Mito)	0.287
9	3/25 07:00 ~ 08:00	栃木県	Tochigi (Itsunomiya	0.127
10	3/25 07:00 ~ 08:00	群馬県	Gunma (Maebashi)	0.085

11	3/25 07:00 ~ 08:00	埼玉県	Saitama (Saitama)	0.112
12	3/25 07:00 ~ 08:00	千葉県	Chiba (Ichihara)	0.092
13	3/25 07:00 ~ 08:00	東京都	Tokyo (Shinjuku-ku	0.132
14	3/25 07:00 ~ 08:00	神奈川県	Kanagawa (Chigasa	0.09
15	3/25 07:00 ~ 08:00	新潟県	Niigata (Niigata)	0.046
16	3/25 07:00 ~ 08:00	富山県	Toyama (Imizu)	0.049
17	3/25 07:00 ~ 08:00	石川県	Ishikawa (Kanazawa	0.048
18	3/25 07:00 ~ 08:00	福井県	Fukui (Fukui)	0.046
19	3/25 07:00 ~ 08:00	山梨県	Yamanashi (Kofu)	0.047
20	3/25 07:00 ~ 08:00	長野県	Nagano (Nagano)	0.052
21	3/25 07:00 ~ 08:00	岐阜県	Gifu (Kakamigahara	0.063
22	3/25 07:00 ~ 08:00	静岡県	Shizuoka (Shizuoka	0.046
23	3/25 07:00 ~ 08:00	愛知県	Aichi (Nagoya)	0.043
24	3/25 07:00 ~ 08:00	三重県	Mie (Yokkaichi)	0.046
25	3/25 07:00 ~ 08:00	滋賀県	Shiga (Ohtsu)	0.036
26	3/25 07:00 ~ 08:00	京都府	Kyoto (Kyoto)	0.04
27	3/25 07:00 ~ 08:00	大阪府	Osaka (Osaka)	0.044
28	3/25 07:00 ~ 08:00	兵庫県	Hyogo (Kobe)	0.037
29	3/25 07:00 ~ 08:00	奈良県	Nara (Nara)	0.049
30	3/25 07:00 ~ 08:00	和歌山県	Wakayama (Wakaya	0.033
31	3/25 07:00 ~ 08:00	鳥取県	Tottori (Touhaku-g	0.063
32	3/25 07:00 ~ 08:00	島根県	Shimane (Matsue)	0.043
33	3/25 07:00 ~ 08:00	岡山県	Okayama (Okayama	0.052
34	3/25 07:00 ~ 08:00	広島県	Hiroshima (Hiroshin	0.052
35	3/25 07:00 ~ 08:00	山口県	Yamaguchi (Yamagu	0.102
36	3/25 07:00 ~ 08:00	徳島県	Tokushima (Tokush	0.04
37	3/25 07:00 ~ 08:00	香川県	Kagawa (Takamatsu	0.057
38	3/25 07:00 ~ 08:00	愛媛県	Ehime (Matsuyama)	0.049
39	3/25 07:00 ~ 08:00	高知県	Kochi (Kochi)	0.028
40	3/25 07:00 ~ 08:00	福岡県	Fukuoka (Dazaifu)	0.038
41	3/25 07:00 ~ 08:00	佐賀県	Saga (Saga)	0.041
42	3/25 07:00 ~ 08:00	長崎県	Nagasaki (Ohmura)	0.029
43	3/25 07:00 ~ 08:00	熊本県	Kumamoto (Uto)	0.027
44	3/25 07:00 ~ 08:00	大分県	Oita (Oita)	0.05
45	3/25 07:00 ~ 08:00	宮崎県	Miyazaki (Miyazaki)	0.026
46	3/25 07:00 ~ 08:00	鹿児島県	Kagoshima (Kagosh	0.035
47	3/25 07:00 ~ 08:00	沖縄県	Okinawa (Uruma)	0.021
1	3/25 08:00 ~ 09:00	北海道	Hokkaido (Sapporo)	0.028
2	3/25 08:00 ~ 09:00	青森県	Aomori (Aomori)	0.023
3	3/25 08:00 ~ 09:00	岩手県	Iwate (Morioka)	0.031
4	3/25 08:00 ~ 09:00	宮城県	Miyagi (Sendai)	
5	3/25 08:00 ~ 09:00	秋田県	Akita (Akita)	0.035
6	3/25 08:00 ~ 09:00	山形県	Yamagata (Yamaga	0.079
7	3/25 08:00 ~ 09:00	福島県	Fukushima (Futaba-gun)	
8	3/25 08:00 ~ 09:00	茨城県	Ibaraki (Mito)	0.285
9	3/25 08:00 ~ 09:00	栃木県	Tochigi (Itsunomiya	0.126
10	3/25 08:00 ~ 09:00	群馬県	Gunma (Maebashi)	0.085
11	3/25 08:00 ~ 09:00	埼玉県	Saitama (Saitama)	0.111
12	3/25 08:00 ~ 09:00	千葉県	Chiba (Ichihara)	0.091
13	3/25 08:00 ~ 09:00	東京都	Tokyo (Shinjuku-ku	0.132
14	3/25 08:00 ~ 09:00	神奈川県	Kanagawa (Chigasa	0.089
15	3/25 08:00 ~ 09:00	新潟県	Niigata (Niigata)	0.049
16	3/25 08:00 ~ 09:00	富山県	Toyama (Imizu)	0.048
17	3/25 08:00 ~ 09:00	石川県	Ishikawa (Kanazawa	0.048
18	3/25 08:00 ~ 09:00	福井県	Fukui (Fukui)	0.046
19	3/25 08:00 ~ 09:00	山梨県	Yamanashi (Kofu)	0.046
20	3/25 08:00 ~ 09:00	長野県	Nagano (Nagano)	0.052

21	3/25 08:00 ~ 09:00	岐阜県	Gifu (Kakamigahara	0.063
22	3/25 08:00 ~ 09:00	静岡県	Shizuoka (Shizuoka	0.046
23	3/25 08:00 ~ 09:00	愛知県	Aichi (Nagoya)	0.042
24	3/25 08:00 ~ 09:00	三重県	Mie (Yokkaichi)	0.046
25	3/25 08:00 ~ 09:00	滋賀県	Shiga (Ohtsu)	0.035
26	3/25 08:00 ~ 09:00	京都府	Kyoto (Kyoto)	0.039
27	3/25 08:00 ~ 09:00	大阪府	Osaka (Osaka)	0.044
28	3/25 08:00 ~ 09:00	兵庫県	Hyogo (Kobe)	0.037
29	3/25 08:00 ~ 09:00	奈良県	Nara (Nara)	0.048
30	3/25 08:00 ~ 09:00	和歌山県	Wakayama (Wakaya	0.033
31	3/25 08:00 ~ 09:00	鳥取県	Tottori (Touhaku-g	0.063
32	3/25 08:00 ~ 09:00	島根県	Shimane (Matsue)	0.047
33	3/25 08:00 ~ 09:00	岡山県	Okayama (Okayama	0.051
34	3/25 08:00 ~ 09:00	広島県	Hiroshima (Hiroshin	0.056
35	3/25 08:00 ~ 09:00	山口県	Yamaguchi (Yamagu	0.095
36	3/25 08:00 ~ 09:00	徳島県	Tokushima (Tokush	0.039
37	3/25 08:00 ~ 09:00	香川県	Kagawa (Takamatsu	0.056
38	3/25 08:00 ~ 09:00	愛媛県	Ehime (Matsuyama)	0.048
39	3/25 08:00 ~ 09:00	高知県	Kochi (Kochi)	0.028
40	3/25 08:00 ~ 09:00	福岡県	Fukuoka (Dazaifu)	0.036
41	3/25 08:00 ~ 09:00	佐賀県	Saga (Saga)	0.04
42	3/25 08:00 ~ 09:00	長崎県	Nagasaki (Ohmura)	0.029
43	3/25 08:00 ~ 09:00	熊本県	Kumamoto (Uto)	0.027
44	3/25 08:00 ~ 09:00	大分県	Oita (Oita)	0.05
45	3/25 08:00 ~ 09:00	宮崎県	Miyazaki (Miyazaki)	0.027
46	3/25 08:00 ~ 09:00	鹿児島県	Kagoshima (Kagosh	0.035
47	3/25 08:00 ~ 09:00	沖縄県	Okinawa (Uruma)	0.021
1	3/25 09:00 ~ 10:00	北海道	Hokkaido (Sapporo)	0.028
2	3/25 09:00 ~ 10:00	青森県	Aomori (Aomori)	0.023
3	3/25 09:00 ~ 10:00	岩手県	Iwate (Morioka)	0.03
4	3/25 09:00 ~ 10:00	宮城県	Miyagi (Sendai)	
5	3/25 09:00 ~ 10:00	秋田県	Akita (Akita)	0.035
6	3/25 09:00 ~ 10:00	山形県	Yamagata (Yamaga	0.079
7	3/25 09:00 ~ 10:00	福島県	Fukushima (Futaba-gun)	
8	3/25 09:00 ~ 10:00	茨城県	Ibaraki (Mito)	0.285
9	3/25 09:00 ~ 10:00	栃木県	Tochigi (Itsunomiya	0.125
10	3/25 09:00 ~ 10:00	群馬県	Gunma (Maebashi)	0.083
11	3/25 09:00 ~ 10:00	埼玉県	Saitama (Saitama)	0.11
12	3/25 09:00 ~ 10:00	千葉県	Chiba (Ichihara)	0.091
13	3/25 09:00 ~ 10:00	東京都	Tokyo (Shinjuku-ku	0.132
14	3/25 09:00 ~ 10:00	神奈川県	Kanagawa (Chigasa	0.089
15	3/25 09:00 ~ 10:00	新潟県	Niigata (Niigata)	0.048
16	3/25 09:00 ~ 10:00	富山県	Toyama (Imizu)	0.049
17	3/25 09:00 ~ 10:00	石川県	Ishikawa (Kanazawa	0.048
18	3/25 09:00 ~ 10:00	福井県	Fukui (Fukui)	0.046
19	3/25 09:00 ~ 10:00	山梨県	Yamanashi (Kofu)	0.046
20	3/25 09:00 ~ 10:00	長野県	Nagano (Nagano)	0.052
21	3/25 09:00 ~ 10:00	岐阜県	Gifu (Kakamigahara	0.062
22	3/25 09:00 ~ 10:00	静岡県	Shizuoka (Shizuoka	0.048
23	3/25 09:00 ~ 10:00	愛知県	Aichi (Nagoya)	0.041
24	3/25 09:00 ~ 10:00	三重県	Mie (Yokkaichi)	0.046
25	3/25 09:00 ~ 10:00	滋賀県	Shiga (Ohtsu)	0.034
26	3/25 09:00 ~ 10:00	京都府	Kyoto (Kyoto)	0.039
27	3/25 09:00 ~ 10:00	大阪府	Osaka (Osaka)	0.043
28	3/25 09:00 ~ 10:00	兵庫県	Hyogo (Kobe)	0.037
29	3/25 09:00 ~ 10:00	奈良県	Nara (Nara)	0.048
30	3/25 09:00 ~ 10:00	和歌山県	Wakayama (Wakaya	0.032

31	3/25 09:00 ~ 10:00	鳥取県	Tottori (Touhaku-g	0.065
32	3/25 09:00 ~ 10:00	島根県	Shimane (Matsue)	0.044
33	3/25 09:00 ~ 10:00	岡山県	Okayama (Okayama	0.051
34	3/25 09:00 ~ 10:00	広島県	Hiroshima (Hiroshin	0.051
35	3/25 09:00 ~ 10:00	山口県	Yamaguchi (Yamagı	0.092
36	3/25 09:00 ~ 10:00	徳島県	Tokushima (Tokush	0.039
37	3/25 09:00 ~ 10:00	香川県	Kagawa (Takamatsı	0.056
38	3/25 09:00 ~ 10:00	愛媛県	Ehime (Matsuyama	0.048
39	3/25 09:00 ~ 10:00	高知県	Kochi (Kochi)	0.027
40	3/25 09:00 ~ 10:00	福岡県	Fukuoka (Dazaifu)	0.036
41	3/25 09:00 ~ 10:00	佐賀県	Saga (Saga)	0.04
42	3/25 09:00 ~ 10:00	長崎県	Nagasaki (Ohmura)	0.029
43	3/25 09:00 ~ 10:00	熊本県	Kumamoto (Uto)	0.027
44	3/25 09:00 ~ 10:00	大分県	Oita (Oita)	0.05
45	3/25 09:00 ~ 10:00	宮崎県	Miyazaki (Miyazaki)	0.027
46	3/25 09:00 ~ 10:00	鹿児島県	Kagoshima (Kagosh	0.037
47	3/25 09:00 ~ 10:00	沖縄県	Okinawa (Uruma)	0.021
1	3/25 10:00 ~ 11:00	北海道	Hokkaido (Sapporo	0.028
2	3/25 10:00 ~ 11:00	青森県	Aomori (Aomori)	0.022
3	3/25 10:00 ~ 11:00	岩手県	Iwate (Morioka)	0.03
4	3/25 10:00 ~ 11:00	宮城県	Miyagi (Sendai)	
5	3/25 10:00 ~ 11:00	秋田県	Akita (Akita)	0.035
6	3/25 10:00 ~ 11:00	山形県	Yamagata (Yamaga	0.079
7	3/25 10:00 ~ 11:00	福島県	Fukushima (Futaba-gun)	
8	3/25 10:00 ~ 11:00	茨城県	Ibaraki (Mito)	0.286
9	3/25 10:00 ~ 11:00	栃木県	Tochigi (Itsunomiya	0.125
10	3/25 10:00 ~ 11:00	群馬県	Gunma (Maebashi)	0.081
11	3/25 10:00 ~ 11:00	埼玉県	Saitama (Saitama)	0.109
12	3/25 10:00 ~ 11:00	千葉県	Chiba (Ichihara)	0.09
13	3/25 10:00 ~ 11:00	東京都	Tokyo (Shinjuku-kı	0.132
14	3/25 10:00 ~ 11:00	神奈川県	Kanagawa (Chigasa	0.087
15	3/25 10:00 ~ 11:00	新潟県	Niigata (Niigata)	0.047
16	3/25 10:00 ~ 11:00	富山県	Toyama (Imizu)	0.049
17	3/25 10:00 ~ 11:00	石川県	Ishikawa (Kanazawa	0.048
18	3/25 10:00 ~ 11:00	福井県	Fukui (Fukui)	0.046
19	3/25 10:00 ~ 11:00	山梨県	Yamanashi (Kofu)	0.045
20	3/25 10:00 ~ 11:00	長野県	Nagano (Nagano)	0.051
21	3/25 10:00 ~ 11:00	岐阜県	Gifu (Kakamigahara	0.061
22	3/25 10:00 ~ 11:00	静岡県	Shizuoka (Shizuoka	0.049
23	3/25 10:00 ~ 11:00	愛知県	Aichi (Nagoya)	0.041
24	3/25 10:00 ~ 11:00	三重県	Mie (Yokkaichi)	0.046
25	3/25 10:00 ~ 11:00	滋賀県	Shiga (Ohtsu)	0.034
26	3/25 10:00 ~ 11:00	京都府	Kyoto (Kyoto)	0.038
27	3/25 10:00 ~ 11:00	大阪府	Osaka (Osaka)	0.043
28	3/25 10:00 ~ 11:00	兵庫県	Hyogo (Kobe)	0.037
29	3/25 10:00 ~ 11:00	奈良県	Nara (Nara)	0.048
30	3/25 10:00 ~ 11:00	和歌山県	Wakayama (Wakaya	0.032
31	3/25 10:00 ~ 11:00	鳥取県	Tottori (Touhaku-g	0.068
32	3/25 10:00 ~ 11:00	島根県	Shimane (Matsue)	0.039
33	3/25 10:00 ~ 11:00	岡山県	Okayama (Okayama	0.051
34	3/25 10:00 ~ 11:00	広島県	Hiroshima (Hiroshin	0.048
35	3/25 10:00 ~ 11:00	山口県	Yamaguchi (Yamagı	0.091
36	3/25 10:00 ~ 11:00	徳島県	Tokushima (Tokush	0.038
37	3/25 10:00 ~ 11:00	香川県	Kagawa (Takamatsı	0.055
38	3/25 10:00 ~ 11:00	愛媛県	Ehime (Matsuyama	0.048
39	3/25 10:00 ~ 11:00	高知県	Kochi (Kochi)	0.026
40	3/25 10:00 ~ 11:00	福岡県	Fukuoka (Dazaifu)	0.036

41	3/25 10:00 ~ 11:00	佐賀県	Saga (Saga)	0.039
42	3/25 10:00 ~ 11:00	長崎県	Nagasaki (Ohmura)	0.029
43	3/25 10:00 ~ 11:00	熊本県	Kumamoto (Uto)	0.026
44	3/25 10:00 ~ 11:00	大分県	Oita (Oita)	0.05
45	3/25 10:00 ~ 11:00	宮崎県	Miyazaki (Miyazaki)	0.027
46	3/25 10:00 ~ 11:00	鹿児島県	Kagoshima (Kagosh	0.035
47	3/25 10:00 ~ 11:00	沖縄県	Okinawa (Uruma)	0.021
1	3/25 11:00 ~ 12:00	北海道	Hokkaido (Sapporo)	0.028
2	3/25 11:00 ~ 12:00	青森県	Aomori (Aomori)	0.023
3	3/25 11:00 ~ 12:00	岩手県	Iwate (Morioka)	0.029
4	3/25 11:00 ~ 12:00	宮城県	Miyagi (Sendai)	
5	3/25 11:00 ~ 12:00	秋田県	Akita (Akita)	0.035
6	3/25 11:00 ~ 12:00	山形県	Yamagata (Yamaga	0.078
7	3/25 11:00 ~ 12:00	福島県	Fukushima (Futaba-gun)	
8	3/25 11:00 ~ 12:00	茨城県	Ibaraki (Mito)	0.282
9	3/25 11:00 ~ 12:00	栃木県	Tochigi (Itsunomiya	0.124
10	3/25 11:00 ~ 12:00	群馬県	Gunma (Maebashi)	0.08
11	3/25 11:00 ~ 12:00	埼玉県	Saitama (Saitama)	0.109
12	3/25 11:00 ~ 12:00	千葉県	Chiba (Ichihara)	0.09
13	3/25 11:00 ~ 12:00	東京都	Tokyo (Shinjuku-ku	0.129
14	3/25 11:00 ~ 12:00	神奈川県	Kanagawa (Chigasa	0.087
15	3/25 11:00 ~ 12:00	新潟県	Niigata (Niigata)	0.046
16	3/25 11:00 ~ 12:00	富山県	Toyama (Imizu)	0.048
17	3/25 11:00 ~ 12:00	石川県	Ishikawa (Kanazawa	0.047
18	3/25 11:00 ~ 12:00	福井県	Fukui (Fukui)	0.046
19	3/25 11:00 ~ 12:00	山梨県	Yamanashi (Kofu)	0.045
20	3/25 11:00 ~ 12:00	長野県	Nagano (Nagano)	0.051
21	3/25 11:00 ~ 12:00	岐阜県	Gifu (Kakamigahara	0.061
22	3/25 11:00 ~ 12:00	静岡県	Shizuoka (Shizuoka	0.049
23	3/25 11:00 ~ 12:00	愛知県	Aichi (Nagoya)	0.04
24	3/25 11:00 ~ 12:00	三重県	Mie (Yokkaichi)	0.046
25	3/25 11:00 ~ 12:00	滋賀県	Shiga (Ohtsu)	0.033
26	3/25 11:00 ~ 12:00	京都府	Kyoto (Kyoto)	0.038
27	3/25 11:00 ~ 12:00	大阪府	Osaka (Osaka)	0.043
28	3/25 11:00 ~ 12:00	兵庫県	Hyogo (Kobe)	0.037
29	3/25 11:00 ~ 12:00	奈良県	Nara (Nara)	0.047
30	3/25 11:00 ~ 12:00	和歌山県	Wakayama (Wakaya	0.031
31	3/25 11:00 ~ 12:00	鳥取県	Tottori (Touhaku-g	0.067
32	3/25 11:00 ~ 12:00	島根県	Shimane (Matsue)	0.037
33	3/25 11:00 ~ 12:00	岡山県	Okayama (Okayama	0.05
34	3/25 11:00 ~ 12:00	広島県	Hiroshima (Hiroshin	0.046
35	3/25 11:00 ~ 12:00	山口県	Yamaguchi (Yamagı	0.091
36	3/25 11:00 ~ 12:00	徳島県	Tokushima (Tokush	0.038
37	3/25 11:00 ~ 12:00	香川県	Kagawa (Takamatsı	0.054
38	3/25 11:00 ~ 12:00	愛媛県	Ehime (Matsuyama)	0.049
39	3/25 11:00 ~ 12:00	高知県	Kochi (Kochi)	0.025
40	3/25 11:00 ~ 12:00	福岡県	Fukuoka (Dazaifu)	0.036
41	3/25 11:00 ~ 12:00	佐賀県	Saga (Saga)	0.039
42	3/25 11:00 ~ 12:00	長崎県	Nagasaki (Ohmura)	0.029
43	3/25 11:00 ~ 12:00	熊本県	Kumamoto (Uto)	0.026
44	3/25 11:00 ~ 12:00	大分県	Oita (Oita)	0.05
45	3/25 11:00 ~ 12:00	宮崎県	Miyazaki (Miyazaki)	0.026
46	3/25 11:00 ~ 12:00	鹿児島県	Kagoshima (Kagosh	0.034
47	3/25 11:00 ~ 12:00	沖縄県	Okinawa (Uruma)	0.021
1	3/25 12:00 ~ 13:00	北海道	Hokkaido (Sapporo)	0.029
2	3/25 12:00 ~ 13:00	青森県	Aomori (Aomori)	0.023
3	3/25 12:00 ~ 13:00	岩手県	Iwate (Morioka)	0.03

4	3/25 12:00 ~ 13:00	宮城県	Miyagi (Sendai)		
5	3/25 12:00 ~ 13:00	秋田県	Akita (Akita)	0.034
6	3/25 12:00 ~ 13:00	山形県	Yamagata (Yamaga	0.078
7	3/25 12:00 ~ 13:00	福島県	Fukushima (Futaba-gun)	
8	3/25 12:00 ~ 13:00	茨城県	Ibaraki (Mito)	0.281
9	3/25 12:00 ~ 13:00	栃木県	Tochigi (Itsunomiya	0.123
10	3/25 12:00 ~ 13:00	群馬県	Gunma (Maebashi)	0.08
11	3/25 12:00 ~ 13:00	埼玉県	Saitama (Saitama)	0.108
12	3/25 12:00 ~ 13:00	千葉県	Chiba (Ichihara)	0.09
13	3/25 12:00 ~ 13:00	東京都	Tokyo (Shinjuku-ku	0.13
14	3/25 12:00 ~ 13:00	神奈川県	Kanagawa (Chigasa	0.087
15	3/25 12:00 ~ 13:00	新潟県	Niigata (Niigata)	0.046
16	3/25 12:00 ~ 13:00	富山県	Toyama (Imizu)	0.048
17	3/25 12:00 ~ 13:00	石川県	Ishikawa (Kanazawa	0.048
18	3/25 12:00 ~ 13:00	福井県	Fukui (Fukui)	0.045
19	3/25 12:00 ~ 13:00	山梨県	Yamanashi (Kofu)	0.045
20	3/25 12:00 ~ 13:00	長野県	Nagano (Nagano)	0.051
21	3/25 12:00 ~ 13:00	岐阜県	Gifu (Kakamigahara	0.061
22	3/25 12:00 ~ 13:00	静岡県	Shizuoka (Shizuoka	0.048
23	3/25 12:00 ~ 13:00	愛知県	Aichi (Nagoya)	0.039
24	3/25 12:00 ~ 13:00	三重県	Mie (Yokkaichi)	0.046
25	3/25 12:00 ~ 13:00	滋賀県	Shiga (Ohtsu)	0.033
26	3/25 12:00 ~ 13:00	京都府	Kyoto (Kyoto)	0.038
27	3/25 12:00 ~ 13:00	大阪府	Osaka (Osaka)	0.043
28	3/25 12:00 ~ 13:00	兵庫県	Hyogo (Kobe)	0.037
29	3/25 12:00 ~ 13:00	奈良県	Nara (Nara)	0.047
30	3/25 12:00 ~ 13:00	和歌山県	Wakayama (Wakaya	0.032
31	3/25 12:00 ~ 13:00	鳥取県	Tottori (Touhaku-g	0.065
32	3/25 12:00 ~ 13:00	島根県	Shimane (Matsue)	0.037
33	3/25 12:00 ~ 13:00	岡山県	Okayama (Okayama	0.049
34	3/25 12:00 ~ 13:00	広島県	Hiroshima (Hiroshin	0.046
35	3/25 12:00 ~ 13:00	山口県	Yamaguchi (Yamagu	0.09
36	3/25 12:00 ~ 13:00	徳島県	Tokushima (Tokush	0.038
37	3/25 12:00 ~ 13:00	香川県	Kagawa (Takamatsu	0.054
38	3/25 12:00 ~ 13:00	愛媛県	Ehime (Matsuyama)	0.047
39	3/25 12:00 ~ 13:00	高知県	Kochi (Kochi)	0.025
40	3/25 12:00 ~ 13:00	福岡県	Fukuoka (Dazaifu)	0.036
41	3/25 12:00 ~ 13:00	佐賀県	Saga (Saga)	0.039
42	3/25 12:00 ~ 13:00	長崎県	Nagasaki (Ohmura)	0.029
43	3/25 12:00 ~ 13:00	熊本県	Kumamoto (Uto)	0.026
44	3/25 12:00 ~ 13:00	大分県	Oita (Oita)	0.049
45	3/25 12:00 ~ 13:00	宮崎県	Miyazaki (Miyazaki)	0.026
46	3/25 12:00 ~ 13:00	鹿児島県	Kagoshima (Kagosh	0.034
47	3/25 12:00 ~ 13:00	沖縄県	Okinawa (Uruma)	0.021
1	3/25 13:00 ~ 14:00	北海道	Hokkaido (Sapporo)	0.03
2	3/25 13:00 ~ 14:00	青森県	Aomori (Aomori)	0.023
3	3/25 13:00 ~ 14:00	岩手県	Iwate (Morioka)	0.03
4	3/25 13:00 ~ 14:00	宮城県	Miyagi (Sendai)	
5	3/25 13:00 ~ 14:00	秋田県	Akita (Akita)	0.034
6	3/25 13:00 ~ 14:00	山形県	Yamagata (Yamaga	0.078
7	3/25 13:00 ~ 14:00	福島県	Fukushima (Futaba-gun)	
8	3/25 13:00 ~ 14:00	茨城県	Ibaraki (Mito)	0.283
9	3/25 13:00 ~ 14:00	栃木県	Tochigi (Itsunomiya	0.123
10	3/25 13:00 ~ 14:00	群馬県	Gunma (Maebashi)	0.08
11	3/25 13:00 ~ 14:00	埼玉県	Saitama (Saitama)	0.107
12	3/25 13:00 ~ 14:00	千葉県	Chiba (Ichihara)	0.09
13	3/25 13:00 ~ 14:00	東京都	Tokyo (Shinjuku-ku	0.13

14	3/25 13:00 ~ 14:00	神奈川県	Kanagawa (Chigasa	0.086
15	3/25 13:00 ~ 14:00	新潟県	Niigata (Niigata)	0.047
16	3/25 13:00 ~ 14:00	富山県	Toyama (Imizu)	0.049
17	3/25 13:00 ~ 14:00	石川県	Ishikawa (Kanazawa	0.049
18	3/25 13:00 ~ 14:00	福井県	Fukui (Fukui)	0.046
19	3/25 13:00 ~ 14:00	山梨県	Yamanashi (Kofu)	0.045
20	3/25 13:00 ~ 14:00	長野県	Nagano (Nagano)	0.05
21	3/25 13:00 ~ 14:00	岐阜県	Gifu (Kakamigahara	0.06
22	3/25 13:00 ~ 14:00	静岡県	Shizuoka (Shizuoka	0.047
23	3/25 13:00 ~ 14:00	愛知県	Aichi (Nagoya)	0.04
24	3/25 13:00 ~ 14:00	三重県	Mie (Yokkaichi)	0.046
25	3/25 13:00 ~ 14:00	滋賀県	Shiga (Ohtsu)	0.033
26	3/25 13:00 ~ 14:00	京都府	Kyoto (Kyoto)	0.038
27	3/25 13:00 ~ 14:00	大阪府	Osaka (Osaka)	0.046
28	3/25 13:00 ~ 14:00	兵庫県	Hyogo (Kobe)	0.037
29	3/25 13:00 ~ 14:00	奈良県	Nara (Nara)	0.048
30	3/25 13:00 ~ 14:00	和歌山県	Wakayama (Wakaya	0.039
31	3/25 13:00 ~ 14:00	鳥取県	Tottori (Touhaku-g	0.064
32	3/25 13:00 ~ 14:00	島根県	Shimane (Matsue)	0.037
33	3/25 13:00 ~ 14:00	岡山県	Okayama (Okayama	0.049
34	3/25 13:00 ~ 14:00	広島県	Hiroshima (Hiroshin	0.046
35	3/25 13:00 ~ 14:00	山口県	Yamaguchi (Yamagu	0.09
36	3/25 13:00 ~ 14:00	徳島県	Tokushima (Tokush	0.038
37	3/25 13:00 ~ 14:00	香川県	Kagawa (Takamatsu	0.054
38	3/25 13:00 ~ 14:00	愛媛県	Ehime (Matsuyama)	0.047
39	3/25 13:00 ~ 14:00	高知県	Kochi (Kochi)	0.025
40	3/25 13:00 ~ 14:00	福岡県	Fukuoka (Dazaifu)	0.036
41	3/25 13:00 ~ 14:00	佐賀県	Saga (Saga)	0.039
42	3/25 13:00 ~ 14:00	長崎県	Nagasaki (Ohmura)	0.029
43	3/25 13:00 ~ 14:00	熊本県	Kumamoto (Uto)	0.026
44	3/25 13:00 ~ 14:00	大分県	Oita (Oita)	0.049
45	3/25 13:00 ~ 14:00	宮崎県	Miyazaki (Miyazaki)	0.026
46	3/25 13:00 ~ 14:00	鹿児島県	Kagoshima (Kagosh	0.034
47	3/25 13:00 ~ 14:00	沖縄県	Okinawa (Uruma)	0.021
1	3/25 14:00 ~ 15:00	北海道	Hokkaido (Sapporo)	0.031
2	3/25 14:00 ~ 15:00	青森県	Aomori (Aomori)	0.023
3	3/25 14:00 ~ 15:00	岩手県	Iwate (Morioka)	0.029
4	3/25 14:00 ~ 15:00	宮城県	Miyagi (Sendai)	
5	3/25 14:00 ~ 15:00	秋田県	Akita (Akita)	0.035
6	3/25 14:00 ~ 15:00	山形県	Yamagata (Yamaga	0.078
7	3/25 14:00 ~ 15:00	福島県	Fukushima (Futaba-gun)	
8	3/25 14:00 ~ 15:00	茨城県	Ibaraki (Mito)	0.279
9	3/25 14:00 ~ 15:00	栃木県	Tochigi (Itsunomiya	0.122
10	3/25 14:00 ~ 15:00	群馬県	Gunma (Maebashi)	0.08
11	3/25 14:00 ~ 15:00	埼玉県	Saitama (Saitama)	0.107
12	3/25 14:00 ~ 15:00	千葉県	Chiba (Ichihara)	0.09
13	3/25 14:00 ~ 15:00	東京都	Tokyo (Shinjuku-ku	0.129
14	3/25 14:00 ~ 15:00	神奈川県	Kanagawa (Chigasa	0.086
15	3/25 14:00 ~ 15:00	新潟県	Niigata (Niigata)	0.046
16	3/25 14:00 ~ 15:00	富山県	Toyama (Imizu)	0.048
17	3/25 14:00 ~ 15:00	石川県	Ishikawa (Kanazawa	0.05
18	3/25 14:00 ~ 15:00	福井県	Fukui (Fukui)	0.046
19	3/25 14:00 ~ 15:00	山梨県	Yamanashi (Kofu)	0.045
20	3/25 14:00 ~ 15:00	長野県	Nagano (Nagano)	0.05
21	3/25 14:00 ~ 15:00	岐阜県	Gifu (Kakamigahara	0.061
22	3/25 14:00 ~ 15:00	静岡県	Shizuoka (Shizuoka	0.047
23	3/25 14:00 ~ 15:00	愛知県	Aichi (Nagoya)	0.039

24	3/25 14:00 ~ 15:00	三重県	Mie (Yokkaichi)	0.049
25	3/25 14:00 ~ 15:00	滋賀県	Shiga (Ohtsu)	0.034
26	3/25 14:00 ~ 15:00	京都府	Kyoto (Kyoto)	0.038
27	3/25 14:00 ~ 15:00	大阪府	Osaka (Osaka)	0.045
28	3/25 14:00 ~ 15:00	兵庫県	Hyogo (Kobe)	0.037
29	3/25 14:00 ~ 15:00	奈良県	Nara (Nara)	0.048
30	3/25 14:00 ~ 15:00	和歌山県	Wakayama (Wakaya	0.039
31	3/25 14:00 ~ 15:00	鳥取県	Tottori (Touhaku-g	0.064
32	3/25 14:00 ~ 15:00	島根県	Shimane (Matsue)	0.036
33	3/25 14:00 ~ 15:00	岡山県	Okayama (Okayam:	0.052
34	3/25 14:00 ~ 15:00	広島県	Hiroshima (Hiroshin	0.046
35	3/25 14:00 ~ 15:00	山口県	Yamaguchi (Yamagι	0.09
36	3/25 14:00 ~ 15:00	徳島県	Tokushima (Tokush	0.037
37	3/25 14:00 ~ 15:00	香川県	Kagawa (Takamatsι	0.054
38	3/25 14:00 ~ 15:00	愛媛県	Ehime (Matsuyama)	0.047
39	3/25 14:00 ~ 15:00	高知県	Kochi (Kochi)	0.024
40	3/25 14:00 ~ 15:00	福岡県	Fukuoka (Dazaifu)	0.036
41	3/25 14:00 ~ 15:00	佐賀県	Saga (Saga)	0.039
42	3/25 14:00 ~ 15:00	長崎県	Nagasaki (Ohmura)	0.029
43	3/25 14:00 ~ 15:00	熊本県	Kumamoto (Uto)	0.026
44	3/25 14:00 ~ 15:00	大分県	Oita (Oita)	0.049
45	3/25 14:00 ~ 15:00	宮崎県	Miyazaki (Miyazaki)	0.026
46	3/25 14:00 ~ 15:00	鹿児島県	Kagoshima (Kagosh	0.034
47	3/25 14:00 ~ 15:00	沖縄県	Okinawa (Uruma)	0.021
1	3/25 15:00 ~ 16:00	北海道	Hokkaido (Sapporo)	0.031
2	3/25 15:00 ~ 16:00	青森県	Aomori (Aomori)	0.023
3	3/25 15:00 ~ 16:00	岩手県	Iwate (Morioka)	0.029
4	3/25 15:00 ~ 16:00	宮城県	Miyagi (Sendai)	
5	3/25 15:00 ~ 16:00	秋田県	Akita (Akita)	0.035
6	3/25 15:00 ~ 16:00	山形県	Yamagata (Yamaga	0.078
7	3/25 15:00 ~ 16:00	福島県	Fukushima (Futaba-gun)	
8	3/25 15:00 ~ 16:00	茨城県	Ibaraki (Mito)	0.278
9	3/25 15:00 ~ 16:00	栃木県	Tochigi (Itsunomiya	0.123
10	3/25 15:00 ~ 16:00	群馬県	Gunma (Maebashi)	0.079
11	3/25 15:00 ~ 16:00	埼玉県	Saitama (Saitama)	0.107
12	3/25 15:00 ~ 16:00	千葉県	Chiba (Ichihara)	0.09
13	3/25 15:00 ~ 16:00	東京都	Tokyo (Shinjuku-kι	0.129
14	3/25 15:00 ~ 16:00	神奈川県	Kanagawa (Chigasa	0.086
15	3/25 15:00 ~ 16:00	新潟県	Niigata (Niigata)	0.047
16	3/25 15:00 ~ 16:00	富山県	Toyama (Imizu)	0.051
17	3/25 15:00 ~ 16:00	石川県	Ishikawa (Kanazawa	0.057
18	3/25 15:00 ~ 16:00	福井県	Fukui (Fukui)	0.046
19	3/25 15:00 ~ 16:00	山梨県	Yamanashi (Kofu)	0.045
20	3/25 15:00 ~ 16:00	長野県	Nagano (Nagano)	0.05
21	3/25 15:00 ~ 16:00	岐阜県	Gifu (Kakamigahara	0.061
22	3/25 15:00 ~ 16:00	静岡県	Shizuoka (Shizuoka	0.054
23	3/25 15:00 ~ 16:00	愛知県	Aichi (Nagoya)	0.04
24	3/25 15:00 ~ 16:00	三重県	Mie (Yokkaichi)	0.054
25	3/25 15:00 ~ 16:00	滋賀県	Shiga (Ohtsu)	0.037
26	3/25 15:00 ~ 16:00	京都府	Kyoto (Kyoto)	0.038
27	3/25 15:00 ~ 16:00	大阪府	Osaka (Osaka)	0.043
28	3/25 15:00 ~ 16:00	兵庫県	Hyogo (Kobe)	0.037
29	3/25 15:00 ~ 16:00	奈良県	Nara (Nara)	0.05
30	3/25 15:00 ~ 16:00	和歌山県	Wakayama (Wakaya	0.034
31	3/25 15:00 ~ 16:00	鳥取県	Tottori (Touhaku-g	0.063
32	3/25 15:00 ~ 16:00	島根県	Shimane (Matsue)	0.036
33	3/25 15:00 ~ 16:00	岡山県	Okayama (Okayam:	0.051

34	3/25 15:00 ~ 16:00	広島県	Hiroshima (Hiroshin	0.046
35	3/25 15:00 ~ 16:00	山口県	Yamaguchi (Yamagı	0.09
36	3/25 15:00 ~ 16:00	徳島県	Tokushima (Tokush	0.037
37	3/25 15:00 ~ 16:00	香川県	Kagawa (Takamatsı	0.055
38	3/25 15:00 ~ 16:00	愛媛県	Ehime (Matsuyama)	0.047
39	3/25 15:00 ~ 16:00	高知県	Kochi (Kochi)	0.024
40	3/25 15:00 ~ 16:00	福岡県	Fukuoka (Dazaifu)	0.036
41	3/25 15:00 ~ 16:00	佐賀県	Saga (Saga)	0.04
42	3/25 15:00 ~ 16:00	長崎県	Nagasaki (Ohmura)	0.029
43	3/25 15:00 ~ 16:00	熊本県	Kumamoto (Uto)	0.027
44	3/25 15:00 ~ 16:00	大分県	Oita (Oita)	0.049
45	3/25 15:00 ~ 16:00	宮崎県	Miyazaki (Miyazaki)	0.026
46	3/25 15:00 ~ 16:00	鹿児島県	Kagoshima (Kagosh	0.034
47	3/25 15:00 ~ 16:00	沖縄県	Okinawa (Uruma)	0.021
1	3/25 16:00 ~ 17:00	北海道	Hokkaido (Sapporo)	0.03
2	3/25 16:00 ~ 17:00	青森県	Aomori (Aomori)	0.023
3	3/25 16:00 ~ 17:00	岩手県	Iwate (Morioka)	0.029
4	3/25 16:00 ~ 17:00	宮城県	Miyagi (Sendai)	
5	3/25 16:00 ~ 17:00	秋田県	Akita (Akita)	0.034
6	3/25 16:00 ~ 17:00	山形県	Yamagata (Yamaga	0.078
7	3/25 16:00 ~ 17:00	福島県	Fukushima (Futaba-gun)	
8	3/25 16:00 ~ 17:00	茨城県	Ibaraki (Mito)	0.277
9	3/25 16:00 ~ 17:00	栃木県	Tochigi (Itsunomiya	0.122
10	3/25 16:00 ~ 17:00	群馬県	Gunma (Maebashi)	0.08
11	3/25 16:00 ~ 17:00	埼玉県	Saitama (Saitama)	0.106
12	3/25 16:00 ~ 17:00	千葉県	Chiba (Ichihara)	0.09
13	3/25 16:00 ~ 17:00	東京都	Tokyo (Shinjuku-kı	0.127
14	3/25 16:00 ~ 17:00	神奈川県	Kanagawa (Chigasa	0.086
15	3/25 16:00 ~ 17:00	新潟県	Niigata (Niigata)	0.046
16	3/25 16:00 ~ 17:00	富山県	Toyama (Imizu)	0.057
17	3/25 16:00 ~ 17:00	石川県	Ishikawa (Kanazawa	0.062
18	3/25 16:00 ~ 17:00	福井県	Fukui (Fukui)	0.047
19	3/25 16:00 ~ 17:00	山梨県	Yamanashi (Kofu)	0.045
20	3/25 16:00 ~ 17:00	長野県	Nagano (Nagano)	0.05
21	3/25 16:00 ~ 17:00	岐阜県	Gifu (Kakamigahara	0.065
22	3/25 16:00 ~ 17:00	静岡県	Shizuoka (Shizuoka	0.05
23	3/25 16:00 ~ 17:00	愛知県	Aichi (Nagoya)	0.043
24	3/25 16:00 ~ 17:00	三重県	Mie (Yokkaichi)	0.056
25	3/25 16:00 ~ 17:00	滋賀県	Shiga (Ohtsu)	0.035
26	3/25 16:00 ~ 17:00	京都府	Kyoto (Kyoto)	0.038
27	3/25 16:00 ~ 17:00	大阪府	Osaka (Osaka)	0.043
28	3/25 16:00 ~ 17:00	兵庫県	Hyogo (Kobe)	0.037
29	3/25 16:00 ~ 17:00	奈良県	Nara (Nara)	0.049
30	3/25 16:00 ~ 17:00	和歌山県	Wakayama (Wakaya	0.032
31	3/25 16:00 ~ 17:00	鳥取県	Tottori (Touhaku-g	0.063
32	3/25 16:00 ~ 17:00	島根県	Shimane (Matsue)	0.036
33	3/25 16:00 ~ 17:00	岡山県	Okayama (Okayama	0.049
34	3/25 16:00 ~ 17:00	広島県	Hiroshima (Hiroshin	0.046
35	3/25 16:00 ~ 17:00	山口県	Yamaguchi (Yamagı	0.09
36	3/25 16:00 ~ 17:00	徳島県	Tokushima (Tokush	0.037
37	3/25 16:00 ~ 17:00	香川県	Kagawa (Takamatsı	0.054
38	3/25 16:00 ~ 17:00	愛媛県	Ehime (Matsuyama)	0.047
39	3/25 16:00 ~ 17:00	高知県	Kochi (Kochi)	0.024
40	3/25 16:00 ~ 17:00	福岡県	Fukuoka (Dazaifu)	0.036
41	3/25 16:00 ~ 17:00	佐賀県	Saga (Saga)	0.039
42	3/25 16:00 ~ 17:00	長崎県	Nagasaki (Ohmura)	0.029
43	3/25 16:00 ~ 17:00	熊本県	Kumamoto (Uto)	0.027

44	3/25 16:00 ~ 17:00	大分県	Oita (Oita)	0.049
45	3/25 16:00 ~ 17:00	宮崎県	Miyazaki (Miyazaki)	0.026
46	3/25 16:00 ~ 17:00	鹿児島県	Kagoshima (Kagosh	0.034
47	3/25 16:00 ~ 17:00	沖縄県	Okinawa (Uruma)	0.021

http://www.mext.go.jp/component/a_menu/other/detail/_icsFiles/afieldfile/2011/03/15/1303577_05_1.pd
f

Normal Range
0.02˜0.105
0.017˜0.102
0.014˜0.084
0.0176˜0.0513
0.022˜0.086
0.025˜0.082
0.037˜0.071
0.036˜0.056
0.030˜0.067
0.017˜0.045
0.031˜0.060
0.022˜0.044
0.028˜0.079
0.035˜0.069
0.031˜0.153
0.029˜0.147
0.0291˜0.1275
0.032˜0.097
0.040˜0.064
0.0299˜0.0974
0.057˜0.110
0.0281˜0.0765
0.035˜0.074
0.0416˜0.0789
0.031˜0.061
0.033˜0.087
0.042˜0.061
0.035˜0.076
0.046˜0.08
0.031˜0.056
0.036˜0.11
0.033˜0.079
0.043˜0.104
0.035˜0.069
0.084˜0.128
0.037˜0.067
0.051˜0.077
0.045˜0.074
0.023˜0.076
0.034˜0.079
0.037˜0.086
0.027˜0.069
0.021˜0.067
0.048˜0.085
0.0243˜0.0664
0.0306˜0.0943
0.0133˜0.0575
0.02˜0.105
0.017˜0.102
0.014˜0.084
0.0176˜0.0513
0.022˜0.086
0.025˜0.082
0.037˜0.071

0.036~0.056
0.030~0.067
0.017~0.045
0.031~0.060
0.022~0.044
0.028~0.079
0.035~0.069
0.031~0.153
0.029~0.147
0.0291~0.1275
0.032~0.097
0.040~0.064
0.0299~0.0974
0.057~0.110
0.0281~0.0765
0.035~0.074
0.0416~0.0789
0.031~0.061
0.033~0.087
0.042~0.061
0.035~0.076
0.046~0.08
0.031~0.056
0.036~0.11
0.033~0.079
0.043~0.104
0.035~0.069
0.084~0.128
0.037~0.067
0.051~0.077
0.045~0.074
0.023~0.076
0.034~0.079
0.037~0.086
0.027~0.069
0.021~0.067
0.048~0.085
0.0243~0.0664
0.0306~0.0943
0.0133~0.0575
0.02~0.105
0.017~0.102
0.014~0.084
0.0176~0.0513
0.022~0.086
0.025~0.082
0.037~0.071
0.036~0.056
0.030~0.067
0.017~0.045
0.031~0.060
0.022~0.044
0.028~0.079
0.035~0.069
0.031~0.153
0.029~0.147
0.0291~0.1275

0.032~0.097
0.040~0.064
0.0299~0.0974
0.057~0.110
0.0281~0.0765
0.035~0.074
0.0416~0.0789
0.031~0.061
0.033~0.087
0.042~0.061
0.035~0.076
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0.036~0.11
0.033~0.079
0.043~0.104
0.035~0.069
0.084~0.128
0.037~0.067
0.051~0.077
0.045~0.074
0.023~0.076
0.034~0.079
0.037~0.086
0.027~0.069
0.021~0.067
0.048~0.085
0.0243~0.0664
0.0306~0.0943
0.0133~0.0575
0.02~0.105
0.017~0.102
0.014~0.084
0.0176~0.0513
0.022~0.086
0.025~0.082
0.037~0.071
0.036~0.056
0.030~0.067
0.017~0.045
0.031~0.060
0.022~0.044
0.028~0.079
0.035~0.069
0.031~0.153
0.029~0.147
0.0291~0.1275
0.032~0.097
0.040~0.064
0.0299~0.0974
0.057~0.110
0.0281~0.0765
0.035~0.074
0.0416~0.0789
0.031~0.061
0.033~0.087
0.042~0.061

0.035~0.076
0.046~0.08
0.031~0.056
0.036~0.11
0.033~0.079
0.043~0.104
0.035~0.069
0.084~0.128
0.037~0.067
0.051~0.077
0.045~0.074
0.023~0.076
0.034~0.079
0.037~0.086
0.027~0.069
0.021~0.067
0.048~0.085
0.0243~0.0664
0.0306~0.0943
0.0133~0.0575
0.02~0.105
0.017~0.102
0.014~0.084
0.0176~0.0513
0.022~0.086
0.025~0.082
0.037~0.071
0.036~0.056
0.030~0.067
0.017~0.045
0.031~0.060
0.022~0.044
0.028~0.079
0.035~0.069
0.031~0.153
0.029~0.147
0.0291~0.1275
0.032~0.097
0.040~0.064
0.0299~0.0974
0.057~0.110
0.0281~0.0765
0.035~0.074
0.0416~0.0789
0.031~0.061
0.033~0.087
0.042~0.061
0.035~0.076
0.046~0.08
0.031~0.056
0.036~0.11
0.033~0.079
0.043~0.104
0.035~0.069
0.084~0.128
0.037~0.067
0.051~0.077

http://www.mext.go.jp/component/a_menu/other/detail/_icsFiles/afieldfile/2011/03/15/1303577_05_1.pd
f

0.045~0.074
0.023~0.076
0.034~0.079
0.037~0.086
0.027~0.069
0.021~0.067
0.048~0.085
0.0243~0.0664
0.0306~0.0943
0.0133~0.0575
0.02~0.105
0.017~0.102
0.014~0.084
0.0176~0.0513
0.022~0.086
0.025~0.082
0.037~0.071
0.036~0.056
0.030~0.067
0.017~0.045
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http://www.mext.go.jp/component/a_menu/other/detail/__icsFiles/afieldfile/2011/03/15/1303577_05_1.pdf

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0.014~0.084
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0.031~0.153
0.029~0.147
0.0291~0.1275
0.032~0.097

http://www.mext.go.jp/component/a_menu/other/detail/_icsFiles/afieldfile/2011/03/15/1303577_05_1.pd
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0.057~0.110
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0.035~0.074
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0.033~0.087
0.042~0.061
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http://www.mext.go.jp/component/a_menu/other/detail/_icsFiles/afieldfile/2011/03/15/1303577_05_1.pdf

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http://www.mext.go.jp/component/a_menu/other/detail/_icsFiles/afieldfile/2011/03/15/1303577_05_1.pd
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0.035~0.074
0.0416~0.0789
0.031~0.061
0.033~0.087
0.042~0.061
0.035~0.076
0.046~0.08
0.031~0.056
0.036~0.11
0.033~0.079
0.043~0.104
0.035~0.069
0.084~0.128
0.037~0.067
0.051~0.077
0.045~0.074
0.023~0.076
0.034~0.079
0.037~0.086
0.027~0.069
0.021~0.067
0.048~0.085
0.0243~0.0664
0.0306~0.0943
0.0133~0.0575
0.02~0.105
0.017~0.102
0.014~0.084
0.0176~0.0513
0.022~0.086
0.025~0.082
0.037~0.071
0.036~0.056
0.030~0.067
0.017~0.045
0.031~0.060
0.022~0.044
0.028~0.079
0.035~0.069
0.031~0.153
0.029~0.147
0.0291~0.1275
0.032~0.097
0.040~0.064
0.0299~0.0974
0.057~0.110
0.0281~0.0765
0.035~0.074
0.0416~0.0789
0.031~0.061
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0.042~0.061
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0.031~0.060
0.022~0.044
0.028~0.079
0.035~0.069
0.031~0.153
0.029~0.147
0.0291~0.1275
0.032~0.097
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0.0299~0.0974
0.057~0.110
0.0281~0.0765
0.035~0.074
0.0416~0.0789
0.031~0.061
0.033~0.087
0.042~0.061
0.035~0.076
0.046~0.08
0.031~0.056
0.036~0.11
0.033~0.079
0.043~0.104
0.035~0.069
0.084~0.128
0.037~0.067

http://www.mext.go.jp/component/a_menu/other/detail/__icsFiles/afieldfile/2011/03/15/1303577_05_1.pd
f

0.051~0.077
0.045~0.074
0.023~0.076
0.034~0.079
0.037~0.086
0.027~0.069
0.021~0.067
0.048~0.085
0.0243~0.0664
0.0306~0.0943
0.0133~0.0575
0.02~0.105
0.017~0.102
0.014~0.084
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0.022~0.086
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0.031~0.153
0.029~0.147
0.0291~0.1275
0.032~0.097
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0.0299~0.0974
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0.0281~0.0765
0.035~0.074
0.0416~0.0789
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0.051~0.077
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0.034~0.079
0.037~0.086
0.027~0.069
0.021~0.067
0.048~0.085
0.0243~0.0664
0.0306~0.0943

http://www.mext.go.jp/component/a_menu/other/detail/_icsFiles/afieldfile/2011/03/15/1303577_05_1.pd
f

0.0133~0.0575
0.02~0.105
0.017~0.102
0.014~0.084
0.0176~0.0513
0.022~0.086
0.025~0.082
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0.028~0.079
0.035~0.069
0.031~0.153
0.029~0.147
0.0291~0.1275
0.032~0.097
0.040~0.064
0.0299~0.0974
0.057~0.110
0.0281~0.0765
0.035~0.074
0.0416~0.0789
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0.042~0.061
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0.046~0.08
0.031~0.056
0.036~0.11
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0.0133~0.0575
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http://www.mext.go.jp/component/a_menu/other/detail/_icsFiles/afieldfile/2011/03/15/1303577_05_1.pd
f

0.017~0.045
0.031~0.060
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0.035~0.074
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0.0299~0.0974
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0.0281~0.0765
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0.0416~0.0789
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0.033~0.079

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f

0.043~0.104
0.035~0.069
0.084~0.128
0.037~0.067
0.051~0.077
0.045~0.074
0.023~0.076
0.034~0.079
0.037~0.086
0.027~0.069
0.021~0.067
0.048~0.085
0.0243~0.0664
0.0306~0.0943
0.0133~0.0575
0.02~0.105
0.017~0.102
0.014~0.084
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0.022~0.086
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0.037~0.071
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0.028~0.079
0.035~0.069
0.031~0.153
0.029~0.147
0.0291~0.1275
0.032~0.097
0.040~0.064
0.0299~0.0974
0.057~0.110
0.0281~0.0765
0.035~0.074
0.0416~0.0789
0.031~0.061
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0.033~0.079
0.043~0.104
0.035~0.069
0.084~0.128
0.037~0.067
0.051~0.077
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0.023~0.076
0.034~0.079
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http://www.mext.go.jp/component/a_menu/other/detail/_icsFiles/afieldfile/2011/03/15/1303577_05_1.pd
f

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0.0243~0.0664
0.0306~0.0943
0.0133~0.0575
0.02~0.105
0.017~0.102
0.014~0.084
0.0176~0.0513
0.022~0.086
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0.0291~0.1275
0.032~0.097
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0.0299~0.0974
0.057~0.110
0.0281~0.0765
0.035~0.074
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0.031~0.061
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f

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0.036~0.056
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0.029~0.147
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0.057~0.110
0.0281~0.0765
0.035~0.074
0.0416~0.0789
0.031~0.061

0.033˜0.087
0.042˜0.061
0.035˜0.076
0.046˜0.08
0.031˜0.056
0.036˜0.11
0.033˜0.079
0.043˜0.104
0.035˜0.069
0.084˜0.128
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0.051˜0.077
0.045˜0.074
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0.034˜0.079
0.037˜0.086
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0.0243˜0.0664
0.0306˜0.0943
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0.02˜0.105
0.017˜0.102
0.014˜0.084
0.0176˜0.0513
0.022˜0.086
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http://www.mext.go.jp/component/a_menu/other/detail/_icsFiles/afieldfile/2011/03/15/1303577_05_1.pd
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http://www.mext.go.jp/component/a_menu/other/detail/_icsFiles/afieldfile/2011/03/15/1303577_05_1.pdf

0.0281~0.0765
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0.033~0.087
0.042~0.061
0.035~0.076
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http://www.mext.go.jp/component/a_menu/other/detail/_icsFiles/afieldfile/2011/03/15/1303577_05_1.pd
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0.033~0.079
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0.084~0.128
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http://www.mext.go.jp/component/a_menu/other/detail/_icsFiles/afieldfile/2011/03/15/1303577_05_1.pd
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0.032~0.097
0.040~0.064
0.0299~0.0974
0.057~0.110
0.0281~0.0765
0.035~0.074
0.0416~0.0789
0.031~0.061
0.033~0.087
0.042~0.061
0.035~0.076
0.046~0.08
0.031~0.056
0.036~0.11
0.033~0.079
0.043~0.104
0.035~0.069

http://www.mext.go.jp/component/a_menu/other/detail/_icsFiles/afieldfile/2011/03/15/1303577_05_1.pd
f

0.084~0.128
0.037~0.067
0.051~0.077
0.045~0.074
0.023~0.076
0.034~0.079
0.037~0.086
0.027~0.069
0.021~0.067
0.048~0.085
0.0243~0.0664
0.0306~0.0943
0.0133~0.0575
0.02~0.105
0.017~0.102
0.014~0.084
0.0176~0.0513
0.022~0.086
0.025~0.082
0.037~0.071
0.036~0.056
0.030~0.067
0.017~0.045
0.031~0.060
0.022~0.044
0.028~0.079
0.035~0.069
0.031~0.153
0.029~0.147
0.0291~0.1275
0.032~0.097
0.040~0.064
0.0299~0.0974
0.057~0.110
0.0281~0.0765
0.035~0.074
0.0416~0.0789
0.031~0.061
0.033~0.087
0.042~0.061
0.035~0.076
0.046~0.08
0.031~0.056
0.036~0.11
0.033~0.079
0.043~0.104
0.035~0.069
0.084~0.128
0.037~0.067
0.051~0.077
0.045~0.074
0.023~0.076
0.034~0.079
0.037~0.086
0.027~0.069
0.021~0.067
0.048~0.085

http://www.mext.go.jp/component/a_menu/other/detail/_icsFiles/afieldfile/2011/03/15/1303577_05_1.pd
f

0.0243~0.0664
0.0306~0.0943
0.0133~0.0575
0.02~0.105
0.017~0.102
0.014~0.084
0.0176~0.0513
0.022~0.086
0.025~0.082
0.037~0.071
0.036~0.056
0.030~0.067
0.017~0.045
0.031~0.060
0.022~0.044
0.028~0.079
0.035~0.069
0.031~0.153
0.029~0.147
0.0291~0.1275
0.032~0.097
0.040~0.064
0.0299~0.0974
0.057~0.110
0.0281~0.0765
0.035~0.074
0.0416~0.0789
0.031~0.061
0.033~0.087
0.042~0.061
0.035~0.076
0.046~0.08
0.031~0.056
0.036~0.11
0.033~0.079
0.043~0.104
0.035~0.069
0.084~0.128
0.037~0.067
0.051~0.077
0.045~0.074
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0.034~0.079
0.037~0.086
0.027~0.069
0.021~0.067
0.048~0.085
0.0243~0.0664
0.0306~0.0943
0.0133~0.0575
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0.017~0.102
0.014~0.084
0.0176~0.0513
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0.0299~0.0974
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0.0133~0.0575
0.02~0.105
0.017~0.102
0.014~0.084
0.0176~0.0513
0.022~0.086
0.025~0.082
0.037~0.071
0.036~0.056
0.030~0.067
0.017~0.045

0.031~0.060
0.022~0.044
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0.035~0.069
0.031~0.153
0.029~0.147
0.0291~0.1275
0.032~0.097
0.040~0.064
0.0299~0.0974
0.057~0.110
0.0281~0.0765
0.035~0.074
0.0416~0.0789
0.031~0.061
0.033~0.087
0.042~0.061
0.035~0.076
0.046~0.08
0.031~0.056
0.036~0.11
0.033~0.079
0.043~0.104
0.035~0.069
0.084~0.128
0.037~0.067
0.051~0.077
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0.023~0.076
0.034~0.079
0.037~0.086
0.027~0.069
0.021~0.067
0.048~0.085
0.0243~0.0664
0.0306~0.0943
0.0133~0.0575
0.02~0.105
0.017~0.102
0.014~0.084
0.0176~0.0513
0.022~0.086
0.025~0.082
0.037~0.071
0.036~0.056
0.030~0.067
0.017~0.045
0.031~0.060
0.022~0.044
0.028~0.079
0.035~0.069
0.031~0.153
0.029~0.147
0.0291~0.1275
0.032~0.097
0.040~0.064
0.0299~0.0974

http://www.mext.go.jp/component/a_menu/other/detail/__icsFiles/afieldfile/2011/03/15/1303577_05_1.pd
f

0.057~0.110
0.0281~0.0765
0.035~0.074
0.0416~0.0789
0.031~0.061
0.033~0.087
0.042~0.061
0.035~0.076
0.046~0.08
0.031~0.056
0.036~0.11
0.033~0.079
0.043~0.104
0.035~0.069
0.084~0.128
0.037~0.067
0.051~0.077
0.045~0.074
0.023~0.076
0.034~0.079
0.037~0.086
0.027~0.069
0.021~0.067
0.048~0.085
0.0243~0.0664
0.0306~0.0943
0.0133~0.0575
0.02~0.105
0.017~0.102
0.014~0.084
0.0176~0.0513
0.022~0.086
0.025~0.082
0.037~0.071
0.036~0.056
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0.017~0.045
0.031~0.060
0.022~0.044
0.028~0.079
0.035~0.069
0.031~0.153
0.029~0.147
0.0291~0.1275
0.032~0.097
0.040~0.064
0.0299~0.0974
0.057~0.110
0.0281~0.0765
0.035~0.074
0.0416~0.0789
0.031~0.061
0.033~0.087
0.042~0.061
0.035~0.076
0.046~0.08
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0.036~0.11
0.033~0.079
0.043~0.104
0.035~0.069
0.084~0.128
0.037~0.067
0.051~0.077
0.045~0.074
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0.034~0.079
0.037~0.086
0.027~0.069
0.021~0.067
0.048~0.085
0.0243~0.0664
0.0306~0.0943
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0.030~0.067
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0.035~0.069
0.031~0.153
0.029~0.147
0.0291~0.1275
0.032~0.097
0.040~0.064
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0.057~0.110
0.0281~0.0765
0.035~0.074
0.0416~0.0789
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0.033~0.087
0.042~0.061
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0.031~0.056
0.036~0.11
0.033~0.079
0.043~0.104
0.035~0.069
0.084~0.128
0.037~0.067
0.051~0.077
0.045~0.074
0.023~0.076
0.034~0.079

http://www.mext.go.jp/component/a_menu/other/detail/_icsFiles/afieldfile/2011/03/15/1303577_05_1.pd
f

0.037~0.086
0.027~0.069
0.021~0.067
0.048~0.085
0.0243~0.0664
0.0306~0.0943
0.0133~0.0575
0.02~0.105
0.017~0.102
0.014~0.084
0.0176~0.0513
0.022~0.086
0.025~0.082
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0.030~0.067
0.017~0.045
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0.031~0.153
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0.0291~0.1275
0.032~0.097
0.040~0.064
0.0299~0.0974
0.057~0.110
0.0281~0.0765
0.035~0.074
0.0416~0.0789
0.031~0.061
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0.084~0.128
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0.037~0.086
0.027~0.069
0.021~0.067
0.048~0.085
0.0243~0.0664
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0.0133~0.0575
0.02~0.105
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http://www.mext.go.jp/component/a_menu/other/detail/_icsFiles/afieldfile/2011/03/15/1303577_05_1.pd
f

0.0176~0.0513
0.022~0.086
0.025~0.082
0.037~0.071
0.036~0.056
0.030~0.067
0.017~0.045
0.031~0.060
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0.0299~0.0974
0.057~0.110
0.0281~0.0765
0.035~0.074
0.0416~0.0789
0.031~0.061
0.033~0.087
0.042~0.061
0.035~0.076
0.046~0.08
0.031~0.056
0.036~0.11
0.033~0.079
0.043~0.104
0.035~0.069
0.084~0.128
0.037~0.067
0.051~0.077
0.045~0.074
0.023~0.076
0.034~0.079
0.037~0.086
0.027~0.069
0.021~0.067

http://www.mext.go.jp/component/a_menu/other/detail/_icsFiles/afieldfile/2011/03/15/1303577_05_1.pd
f

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0.0243~0.0664
0.0306~0.0943
0.0133~0.0575
0.02~0.105
0.017~0.102
0.014~0.084
0.0176~0.0513
0.022~0.086
0.025~0.082
0.037~0.071
0.036~0.056
0.030~0.067
0.017~0.045
0.031~0.060
0.022~0.044
0.028~0.079
0.035~0.069
0.031~0.153
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0.0291~0.1275
0.032~0.097
0.040~0.064
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0.057~0.110
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0.035~0.074
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0.0416~0.0789
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0.033~0.087
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0.035~0.076
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0.031~0.056
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0.084~0.128
0.037~0.067

http://www.mext.go.jp/component/a_menu/other/detail/_icsFiles/afieldfile/2011/03/15/1303577_05_1.pd
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0.023~0.076
0.034~0.079
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0.027~0.069
0.021~0.067
0.048~0.085
0.0243~0.0664
0.0306~0.0943
0.0133~0.0575
0.02~0.105
0.017~0.102
0.014~0.084
0.0176~0.0513
0.022~0.086
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0.031~0.153
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0.0291~0.1275
0.032~0.097
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0.0299~0.0974
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0.0281~0.0765
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0.0416~0.0789
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0.033~0.087
0.042~0.061
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http://www.mext.go.jp/component/a_menu/other/detail/_icsFiles/afieldfile/2011/03/15/1303577_05_1.pd
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0.017~0.102
0.014~0.084
0.0176~0.0513
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0.031~0.056
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http://www.mext.go.jp/component/a_menu/other/detail/_icsFiles/afieldfile/2011/03/15/1303577_05_1.pd
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0.0281~0.0765
0.035~0.074
0.0416~0.0789
0.031~0.061
0.033~0.087
0.042~0.061
0.035~0.076
0.046~0.08
0.031~0.056
0.036~0.11
0.033~0.079
0.043~0.104
0.035~0.069
0.084~0.128
0.037~0.067
0.051~0.077
0.045~0.074
0.023~0.076
0.034~0.079
0.037~0.086
0.027~0.069
0.021~0.067
0.048~0.085
0.0243~0.0664
0.0306~0.0943
0.0133~0.0575
0.02~0.105
0.017~0.102
0.014~0.084
0.0176~0.0513
0.022~0.086

http://www.mext.go.jp/component/a_menu/other/detail/_icsFiles/afieldfile/2011/03/15/1303577_05_1.pdf

0.025~0.082
0.037~0.071
0.036~0.056
0.030~0.067
0.017~0.045
0.031~0.060
0.022~0.044
0.028~0.079
0.035~0.069
0.031~0.153
0.029~0.147
0.0291~0.1275
0.032~0.097
0.040~0.064
0.0299~0.0974
0.057~0.110
0.0281~0.0765
0.035~0.074
0.0416~0.0789
0.031~0.061
0.033~0.087
0.042~0.061
0.035~0.076
0.046~0.08
0.031~0.056
0.036~0.11
0.033~0.079
0.043~0.104
0.035~0.069
0.084~0.128
0.037~0.067
0.051~0.077
0.045~0.074
0.023~0.076
0.034~0.079
0.037~0.086
0.027~0.069
0.021~0.067
0.048~0.085
0.0243~0.0664
0.0306~0.0943
0.0133~0.0575
0.02~0.105
0.017~0.102
0.014~0.084
0.0176~0.0513
0.022~0.086
0.025~0.082
0.037~0.071
0.036~0.056
0.030~0.067
0.017~0.045
0.031~0.060
0.022~0.044
0.028~0.079
0.035~0.069
0.031~0.153

http://www.mext.go.jp/component/a_menu/other/detail/__icsFiles/afieldfile/2011/03/15/1303577_05_1.pd
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0.029~0.147
0.0291~0.1275
0.032~0.097
0.040~0.064
0.0299~0.0974
0.057~0.110
0.0281~0.0765
0.035~0.074
0.0416~0.0789
0.031~0.061
0.033~0.087
0.042~0.061
0.035~0.076
0.046~0.08
0.031~0.056
0.036~0.11
0.033~0.079
0.043~0.104
0.035~0.069
0.084~0.128
0.037~0.067
0.051~0.077
0.045~0.074
0.023~0.076
0.034~0.079
0.037~0.086
0.027~0.069
0.021~0.067
0.048~0.085
0.0243~0.0664
0.0306~0.0943
0.0133~0.0575
0.02~0.105
0.017~0.102
0.014~0.084
0.0176~0.0513
0.022~0.086
0.025~0.082
0.037~0.071
0.036~0.056
0.030~0.067
0.017~0.045
0.031~0.060
0.022~0.044
0.028~0.079
0.035~0.069
0.031~0.153
0.029~0.147
0.0291~0.1275
0.032~0.097
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0.0299~0.0974
0.057~0.110
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0.035~0.074
0.0416~0.0789
0.031~0.061

0.033~0.087
0.042~0.061
0.035~0.076
0.046~0.08
0.031~0.056
0.036~0.11
0.033~0.079
0.043~0.104
0.035~0.069
0.084~0.128
0.037~0.067
0.051~0.077
0.045~0.074
0.023~0.076
0.034~0.079
0.037~0.086
0.027~0.069
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0.048~0.085
0.0243~0.0664
0.0306~0.0943
0.0133~0.0575
0.02~0.105
0.017~0.102
0.014~0.084
0.0176~0.0513
0.022~0.086
0.025~0.082
0.037~0.071
0.036~0.056
0.030~0.067
0.017~0.045
0.031~0.060
0.022~0.044
0.028~0.079
0.035~0.069
0.031~0.153
0.029~0.147
0.0291~0.1275
0.032~0.097
0.040~0.064
0.0299~0.0974
0.057~0.110
0.0281~0.0765
0.035~0.074
0.0416~0.0789
0.031~0.061
0.033~0.087
0.042~0.061
0.035~0.076
0.046~0.08
0.031~0.056
0.036~0.11
0.033~0.079
0.043~0.104
0.035~0.069
0.084~0.128

http://www.mext.go.jp/component/a_menu/other/detail/_icsFiles/afieldfile/2011/03/15/1303577_05_1.pdf

0.037~0.067
0.051~0.077
0.045~0.074
0.023~0.076
0.034~0.079
0.037~0.086
0.027~0.069
0.021~0.067
0.048~0.085
0.0243~0.0664
0.0306~0.0943
0.0133~0.0575
0.02~0.105
0.017~0.102
0.014~0.084
0.0176~0.0513
0.022~0.086
0.025~0.082
0.037~0.071
0.036~0.056
0.030~0.067
0.017~0.045
0.031~0.060
0.022~0.044
0.028~0.079
0.035~0.069
0.031~0.153
0.029~0.147
0.0291~0.1275
0.032~0.097
0.040~0.064
0.0299~0.0974
0.057~0.110
0.0281~0.0765
0.035~0.074
0.0416~0.0789
0.031~0.061
0.033~0.087
0.042~0.061
0.035~0.076
0.046~0.08
0.031~0.056
0.036~0.11
0.033~0.079
0.043~0.104
0.035~0.069
0.084~0.128
0.037~0.067
0.051~0.077
0.045~0.074
0.023~0.076
0.034~0.079
0.037~0.086
0.027~0.069
0.021~0.067
0.048~0.085
0.0243~0.0664

0.0306~0.0943
0.0133~0.0575
0.02~0.105
0.017~0.102
0.014~0.084
0.0176~0.0513
0.022~0.086
0.025~0.082
0.037~0.071
0.036~0.056
0.030~0.067
0.017~0.045
0.031~0.060
0.022~0.044
0.028~0.079
0.035~0.069
0.031~0.153
0.029~0.147
0.0291~0.1275
0.032~0.097
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0.0299~0.0974
0.057~0.110
0.0281~0.0765
0.035~0.074
0.0416~0.0789
0.031~0.061
0.033~0.087
0.042~0.061
0.035~0.076
0.046~0.08
0.031~0.056
0.036~0.11
0.033~0.079
0.043~0.104
0.035~0.069
0.084~0.128
0.037~0.067
0.051~0.077
0.045~0.074
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0.0243~0.0664
0.0306~0.0943
0.0133~0.0575
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0.022~0.086
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0.037~0.071
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http://www.mext.go.jp/component/a_menu/other/detail/__icsFiles/afieldfile/2011/03/15/1303577_05_1.pd
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0.030~0.067
0.017~0.045
0.031~0.060
0.022~0.044
0.028~0.079
0.035~0.069
0.031~0.153
0.029~0.147
0.0291~0.1275
0.032~0.097
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0.0299~0.0974
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0.0281~0.0765
0.035~0.074
0.0416~0.0789
0.031~0.061
0.033~0.087
0.042~0.061
0.035~0.076
0.046~0.08
0.031~0.056
0.036~0.11
0.033~0.079
0.043~0.104
0.035~0.069
0.084~0.128
0.037~0.067
0.051~0.077
0.045~0.074
0.023~0.076
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0.037~0.086
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0.0243~0.0664
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0.0133~0.0575
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0.017~0.102
0.014~0.084
0.0176~0.0513
0.022~0.086
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0.037~0.071
0.036~0.056
0.030~0.067
0.017~0.045
0.031~0.060
0.022~0.044
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0.035~0.069
0.031~0.153
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0.0291~0.1275
0.032~0.097

0.040~0.064
0.0299~0.0974
0.057~0.110
0.0281~0.0765
0.035~0.074
0.0416~0.0789
0.031~0.061
0.033~0.087
0.042~0.061
0.035~0.076
0.046~0.08
0.031~0.056
0.036~0.11
0.033~0.079
0.043~0.104
0.035~0.069
0.084~0.128
0.037~0.067
0.051~0.077
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0.048~0.085
0.0243~0.0664
0.0306~0.0943
0.0133~0.0575
0.02~0.105
0.017~0.102
0.014~0.084
0.0176~0.0513
0.022~0.086
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0.037~0.071
0.036~0.056
0.030~0.067
0.017~0.045
0.031~0.060
0.022~0.044
0.028~0.079
0.035~0.069
0.031~0.153
0.029~0.147
0.0291~0.1275
0.032~0.097
0.040~0.064
0.0299~0.0974
0.057~0.110
0.0281~0.0765
0.035~0.074
0.0416~0.0789
0.031~0.061
0.033~0.087
0.042~0.061
0.035~0.076

http://www.mext.go.jp/component/a_menu/other/detail/__icsFiles/afieldfile/2011/03/15/1303577_05_1.pdf

0.046˜0.08
0.031˜0.056
0.036˜0.11
0.033˜0.079
0.043˜0.104
0.035˜0.069
0.084˜0.128
0.037˜0.067
0.051˜0.077
0.045˜0.074
0.023˜0.076
0.034˜0.079
0.037˜0.086
0.027˜0.069
0.021˜0.067
0.048˜0.085
0.0243˜0.0664
0.0306˜0.0943
0.0133˜0.0575
0.02˜0.105
0.017˜0.102
0.014˜0.084
0.0176˜0.0513
0.022˜0.086
0.025˜0.082
0.037˜0.071
0.036˜0.056
0.030˜0.067
0.017˜0.045
0.031˜0.060
0.022˜0.044
0.028˜0.079
0.035˜0.069
0.031˜0.153
0.029˜0.147
0.0291˜0.1275
0.032˜0.097
0.040˜0.064
0.0299˜0.0974
0.057˜0.110
0.0281˜0.0765
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0.0416˜0.0789
0.031˜0.061
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0.023~0.076
0.034~0.079
0.037~0.086
0.027~0.069
0.021~0.067
0.048~0.085
0.0243~0.0664
0.0306~0.0943
0.0133~0.0575
0.02~0.105
0.017~0.102
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0.022~0.086
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0.030~0.067
0.017~0.045
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0.031~0.153
0.029~0.147
0.0291~0.1275
0.032~0.097
0.040~0.064
0.0299~0.0974
0.057~0.110
0.0281~0.0765
0.035~0.074
0.0416~0.0789
0.031~0.061
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0.042~0.061
0.035~0.076
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0.036~0.11
0.033~0.079
0.043~0.104
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0.084~0.128
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0.027~0.069
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0.048~0.085
0.0243~0.0664
0.0306~0.0943
0.0133~0.0575
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http://www.mext.go.jp/component/a_menu/other/detail/__icsFiles/afieldfile/2011/03/15/1303577_05_1.pd
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0.017~0.102
0.014~0.084
0.0176~0.0513
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0.022~0.044
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0.031~0.153
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0.0281~0.0765
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0.022~0.086
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http://www.mext.go.jp/component/a_menu/other/detail/_icsFiles/afieldfile/2011/03/15/1303577_05_1.pd
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http://www.mext.go.jp/component/a_menu/other/detail/_icsFiles/afieldfile/2011/03/15/1303577_05_1.pd
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0.046~0.08
0.031~0.056
0.036~0.11
0.033~0.079
0.043~0.104
0.035~0.069
0.084~0.128
0.037~0.067
0.051~0.077
0.045~0.074
0.023~0.076
0.034~0.079
0.037~0.086
0.027~0.069
0.021~0.067
0.048~0.085
0.0243~0.0664
0.0306~0.0943
0.0133~0.0575
0.02~0.105
0.017~0.102
0.014~0.084
0.0176~0.0513
0.022~0.086
0.025~0.082
0.037~0.071
0.036~0.056
0.030~0.067
0.017~0.045
0.031~0.060
0.022~0.044
0.028~0.079
0.035~0.069
0.031~0.153
0.029~0.147
0.0291~0.1275
0.032~0.097
0.040~0.064
0.0299~0.0974
0.057~0.110
0.0281~0.0765
0.035~0.074

0.0416~0.0789
0.031~0.061
0.033~0.087
0.042~0.061
0.035~0.076
0.046~0.08
0.031~0.056
0.036~0.11
0.033~0.079
0.043~0.104
0.035~0.069
0.084~0.128
0.037~0.067
0.051~0.077
0.045~0.074
0.023~0.076
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0.037~0.086
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0.021~0.067
0.048~0.085
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0.0133~0.0575
0.02~0.105
0.017~0.102
0.014~0.084
0.0176~0.0513
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0.037~0.071
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0.031~0.153
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0.0291~0.1275
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0.0299~0.0974
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0.042~0.061
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0.021~0.067

http://www.mext.go.jp/component/a_menu/other/detail/__icsFiles/afieldfile/2011/03/15/1303577_05_1.pd
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0.048~0.085
0.0243~0.0664
0.0306~0.0943
0.0133~0.0575