

Group DM

(Records Withheld
In Part)

****NOTICE****

This package contains both Japan and Non-Japan related records. The non-Japan records pertain to the specific request made by FOIA/PA-2011-0140, FOIA/PA-2011-0148, and FOIA/PA-2011-0191.

Hogan, Rosemary

From: Weaver, Thomas
Sent: Friday, March 11, 2011 9:33 AM
To: Hogan, Rosemary
Subject: DE Presentation

Rosemary,

If you are interested in reviewing my presentation for the DE meeting on Monday, you can access the slides on the g drive (G:\DE\SGSEBWeaver).

Thomas

DM/1

Hogan, Rosemary

From: Hogan, Rosemary
Sent: Friday, March 11, 2011 1:01 PM
To: Ake, Jon; Anooshehpour, Rasool; Candra, Hernando; Graves, Herman; Gupta, Abhinav; Herrity, Thomas; Kammerer, Annie; Pires, Jose; Rivera-Lugo, Richard; Roche, Robert; Sircar, Madhumita; Stovall, Scott; Weaver, Thomas; Ali, Syed; Murphy, Andrew
Subject: FW: 3/16/11-Notice of Forthcoming Meeting/Webinar on Generic Licensing Topics and Policy Issues Related to Small Modular Reactors
Attachments: ADAMS Document.ADC

From: Zaki, Tarek
Sent: Tuesday, March 08, 2011 5:24 PM
To: Skarda, Raymond; Madni, Imtiaz; Bajorek, Stephen; Basu, Sudhamay; Herrity, Thomas; Wood, Jeffery; Drouin, Mary; Lien, Peter; Yarsky, Peter; Staudenmeier, Joseph; Hudson, Nathanael; Frankl, Istvan; Krotiuk, William; Hogan, Rosemary; Gavrilas, Mirela; Csontos, Aladar; Peters, Sean; Coyne, Kevin; Demoss, Gary; Hoxie, Chris; Elkins, Scott
Cc: Scott, Michael; Rubin, Stuart
Subject: FW: 3/16/11-Notice of Forthcoming Meeting/Webinar on Generic Licensing Topics and Policy Issues Related to Small Modular Reactors

FYI, please feel free to forward to others. Thanks. Tarek

From: Scott, Michael
Sent: Saturday, March 05, 2011 8:25 AM
To: Zaki, Tarek; Rubin, Stuart
Subject: FW: 3/16/11-Notice of Forthcoming Meeting/Webinar on Generic Licensing Topics and Policy Issues Related to Small Modular Reactors

Tarek:

Please forward to other RES stakeholders, including NARBians, as you see fit. Thanks

From: James, Deonna
Sent: Friday, March 04, 2011 2:36 PM
To: RidsNroArpArb1_2 Resource; RidsOpaMail Resource; RidsNroDnrl Resource; RidsNroDsra Resource; RidsAcraAcnw_MailCTR Resource; RidsNroOd Resource; RidsNroDser Resource; RidsNroDe Resource; NRO_Branch_Chiefs; Williams, Joseph; RidsOgcMailCenter Resource; RidsNroArp Resource; RidsNroDcip Resource; Mayfield, Michael; Scott, Michael
Cc: Reckley, William; Held, Wesley
Subject: 3/16/11-Notice of Forthcoming Meeting/Webinar on Generic Licensing Topics and Policy Issues Related to Small Modular Reactors

Date: March 3, 2011

To: William D. Reckley, NRO
From: Wesley Held, NRO

Subject: Notice of Forthcoming Meeting/Webinar on Generic Licensing Topics and Policy Issues Related to Small Modular Reactors

Meeting Date: March 16, 2011

This Meeting Notice can also be found on the NRC Main Website.

ADAMS Accession NO.: ML110620357

Deonna James

Secretary II

Location: T-9F27

U.S. Nuclear Regulatory Commission

301-415-5828

March 3, 2011

REVISED AGENDA

MEMORANDUM TO: William D. Reckley, Branch Chief
Advanced Reactors Branch 1
Advanced Reactor Program
Office of New Reactors

FROM: Wesley Held, Project Manager */RA by William Reckley for/*
Advanced Reactors Branch 1
Advanced Reactor Program
Office of New Reactors

SUBJECT: NOTICE OF FORTHCOMING MEETING/WEBINAR ON GENERIC
LICENSING TOPICS AND POLICY ISSUES RELATED TO SMALL
MODULAR REACTORS

DATE & TIME: Wednesday, March 16, 2011 9:00 a.m. – 4:30 p.m.

LOCATION: Legacy Meeting Centre
Rose Hill Ballroom
1750 Rockville Pike
Rockville, Maryland 20852

PURPOSE: The purpose of the meeting is to discuss generic licensing and policy
issues related to small modular reactors with industry working groups
(coordinated by the Nuclear Energy Institute (NEI)) and other
stakeholders.

CATEGORY 2*: This is a Category 2 meeting. The public is invited to participate in this
meeting by discussing generic regulatory issues with the Nuclear
Regulatory Commission (NRC) staff at designated points identified on
the agenda. The NRC's Policy Statement, "Enhancing Public
Participation on NRC Meetings," effective May 28, 2002, applies to this
meeting. The policy statement may be found on the NRC website,
www.nrc.gov, and contains information regarding visitors and security.

CONTACTS: Wesley Held, NRO/ARP
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William Reckley NRO/ARP
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*Commission's Policy Statement on "Enhancing Public Participation in NRC Meetings"
(67 FR36920) May 28, 2002.

W. Reckley

- 2 -

TELECONFERENCE: Interested members of the public can participate in this meeting via webinar and/or a toll-free teleconference.

To register for the webinar, please visit
<https://www1.gotomeeting.com/register/782543952>

Teleconference information:

Toll free number: 888-603-7034

Passcode (b)(6)

PARTICIPANTS: Participants from the NRC include members of the Office of New Reactors (NRO) and other NRC organizations.

NRC
W. Reckley, NRO
A. Cabbage, NRO, et al.

Industry
V. Anderson, NEI, et al.

Enclosure:
As stated

cc: See next page

W. Reckley

- 2 -

TELECONFERENCE: Interested members of the public can participate in this meeting via webinar and/or a toll-free teleconference.

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Teleconference information:

Toll free number: 888-603-7034

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PARTICIPANTS: Participants from the NRC include members of the Office of New Reactors (NRO) and other NRC organizations.

NRC
W. Reckley, NRO
A. Cabbage, NRO, et al.

Industry
V. Anderson, NEI, et al.

Enclosure:
As stated

cc: See next page

DISTRIBUTION:

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JWilliams, NRO

RidsOgcMailCenter
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RidsNroDcip
MMayfield, NRO
WReckley, NRO
MScott, RES

ADAMS Accession No.: ML110620357

NRC-001

OFFICE	PM:NRO/ARP/ARB1	BC:NRO/ARP/ARB1
NAME	WHeld	WReckley
DATE	3/3/2011	3/3/2011

OFFICIAL RECORD COPY

REVISED
TENTATIVE AGENDA
SMR Licensing Workshop
 Wednesday, March 16, 2011
 9:00 a.m – 4:00 p.m.

TIME	TOPIC	FACILITATOR
9:00 a.m. – 9:05 a.m.	Opening, Introductions	NRC
9:05 a.m. – 9:20 a.m.	Status of Industry Resolution of Generic Issues	NEI
9:20 a.m. – 9:45 a.m.	Status of NRC Resolution of Generic Issues	NRC
9:45 a.m. – 10:15 a.m.	Price Anderson	NEI
10:15 a.m. – 10:30 a.m.	BREAK	
10:30 a.m. – 11:00 a.m.	PRA Overview	NRC
11:00 a.m. – 11:45 a.m.	Insights from New Reactor Reviews*	NRC
11:45 a.m. – 12:45 p.m.	LUNCH	
12:45 p.m. – 1:45 p.m.	Risk-Informed Licensing*	NRC
1:45 p.m. – 2:45 p.m.	Emergency Planning	NEI
2:45 p.m. – 3:00 p.m.	BREAK	
3:00 p.m. – 3:15 p.m.	Submittal Guidance	NRC
3:15- p.m - 4:15 p.m.	Insights from New Reactor Reviews	NEI
4:15 p.m.- 4:30 p.m.	Questions	ALL
4:30 p.m.	Adjourn	

Enclosure

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Hogan, Rosemary

From: Hogan, Rosemary
Sent: Friday, March 11, 2011 4:18 PM
To: Ake, Jon; Anooshehpoor, Rasool; Candra, Hernando; Graves, Herman; Gupta, Abhinav; Herrity, Thomas; Kammerer, Annie; Pires, Jose; Rivera-Lugo, Richard; Roche, Robert; Sircar, Madhumita; Stovall, Scott; Weaver, Thomas; Murphy, Andrew; Ali, Syed
Subject: FW: ACTION: Quarterly Accomplishments for 2nd Quarter of FY2011
Importance: High

I hope we have something to offer. ☺ The time period is January-March.

From: Rivera-Lugo, Richard
Sent: Friday, March 11, 2011 3:31 PM
To: Csontos, Aladar; Gavrilas, Mirela; Koshy, Thomas; Hogan, Rosemary; Sydnor, Russell; Boyce, Tom (RES)
Cc: Case, Michael; Richards, Stuart
Subject: ACTION: Quarterly Accomplishments for 2nd Quarter of FY2011
Importance: High

Branch Chiefs,

Please send me your two most significant branch accomplishments, the regulatory use, and the associated staff for the accomplishment **by COB March 24th**. If you would like to provide more than two options for consideration, please send them ranked by importance. Keep in mind that the quarterly report focuses only on the accomplishments, the NUREG table, and the list of papers or conferences that we publish or sponsor.

For your reference, you will find in the attachment a copy of the 1st Quarter FY 2011 Report.

Thanks,
Richie

Richard Rivera-Lugo, EIT, MEM
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RES/DE
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Mail M.S. C5C07M
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 Please consider the Environment before printing this e-mail.

DM/3

To: Schwartzman, Jennifer
Subject: ISSC Working Groups

From the IAEA/ISSC, attached is an official nomination request for folks to be designated as members of the various working groups to support ISSC activities. A description of the terms of reference for each working group is contained in the draft work plan that resides with Dr. Kammerer (I believe this is the document that she is unhappy with). Upon looking at the working group descriptions, it appears to me that (resources permitting), nominations should come from NRR, NRO, RES and other USG agencies like NOAA, USGS, etc.

Note that a date for some of the meetings are still TBD because they are waiting for USG to designate members.

-Mark

Mark R. Shaffer • Nuclear Safety Attaché • United States Mission to International Organizations in Vienna
Wagramerstraße 17-19, 1220 Vienna | +43-1-31339-4745 | Shaffermr@state.gov

This email is UNCLASSIFIED.



Atoms for Peace

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HE Mr. Glyn T. Davies

Ambassador

Resident Representative of the United States of

America to the IAEA

Wagramer Strasse 17-19

1220 Vienna

AUSTRIA

2011-02-28

Sir,

I have the honour to refer to the discussion about International Seismic Safety Centre's Extrabudgetary Projects (ISSC-EBP) during the First Annual Meeting of the Donors of the ISSC held in Vienna from 19 to 21 January 2011.

We would like to inform you that the following Working Group Kick-off meetings will be held to develop detailed working plans and schedules of each Working Group respectively.

- Working Area 1: Seismic Hazards
 - ✓ Working Group Leaders Meeting: **19-21 April 2011, Tokyo, Japan**
 - ✓ Working Group Meeting 1-1 ~ 1-6: **6-17 June 2011, Tokyo, Japan**
- Working Area 2: Seismic Design and Qualification
 - ✓ Working Group 2-1 Member Meeting: **11-12 April 2011, IAEA Headquarter**
- Working Area 3: Seismic Safety Evaluation
 - ✓ Working Group 3-1 Member Meeting: **27 May 2011, IAEA Headquarter**
 - ✓ Working Group 3-2 Member Meeting: **13-14 April 2011, IAEA Headquarter**
- Working Area 4: External Events Preparedness and Response
 - ✓ Working Group 4-1 Member Meeting: **28-30 March 2011, IAEA Headquarter**
- Working Area 5: Tsunami Hazards
 - ✓ Working Group 5-1 Member Meeting: **22-24 June 2011, IAEA Headquarter**
 - ✓ Working Group 5-2 Member Meeting: **9-10 May 2011, IAEA Headquarter**
- Working Area 6: Volcanic Hazards
 - ✓ Working Group 6-1 Member Meeting: ¹
- Working Area 7: Engineering Aspects of Protection against Sabotage
 - ✓ Working Group 7-1 Member Meeting: **28-29 March 2011, Ottawa, Canada**

¹ We cannot set the meeting date, because we have not yet received the Working Group leaders from your Government.

- Working Area 8: Site Evaluation and External Events Safety Assessment
 - ✓ Working Group 8-1 Member Meeting: *¹
- Working Area 9: Information and Notification System
 - ✓ Working Group 9-1 Member Meeting: **5-6 May 2011, IAEA Headquarter**
- Working Area 10: Public Communication, Dissemination of Lessons Learned and Capacity Building
 - ✓ Working Group 10-1 Member Meeting: **27 June - 1 July 2011, Tokyo, Japan**

I would kindly request your assistance for investigating with your Government the possibility of sending a representative to participate in each meeting where your government has expressed interest.

Let me take this opportunity to express my sincere gratitude for your Government's continuous support of the Agency's activities in the area of Nuclear Safety and Security.

Accept, Sir, the assurances of my highest consideration.

Sujit Samaddar
Centre Head
International Seismic Safety Centre (ISSC)
Division of Nuclear Installation Safety
Department of Nuclear Safety and Security

Hogan, Rosemary

From: Hogan, Rosemary
Sent: Friday, March 11, 2011 5:51 PM
To: Ake, Jon; Anooshehpoor, Rasool; Candra, Hernando; Graves, Herman; Gupta, Abhinav; Herrity, Thomas; Kammerer, Annie; Pires, Jose; Rivera-Lugo, Richard; Roche, Robert; Sircar, Madhumita; Stovall, Scott; Weaver, Thomas; Ali, Syed; Murphy, Andrew
Subject: FW: Senior Performance Official Report - Mid-Year FY 2011
Attachments: Input for Senior Performance Official Report - MidYear_2011.docx
Importance: High

Please send to Herman and he will compile.

From: Rivera-Lugo, Richard
Sent: Friday, March 11, 2011 5:17 PM
To: Csontos, Aladar; Gavrilas, Mirela; Boyce, Tom (RES); Sydnor, Russell; Koshy, Thomas; Hogan, Rosemary
Cc: Case, Michael; Richards, Stuart
Subject: Senior Performance Official Report - Mid-Year FY 2011
Importance: High

Branch Chiefs,

A ticket has been issued to provide input for the FY2011 Mid-Year Senior Performance Official Report. As per instructions from the office TA (Brett), each division should provide no more than 3 bullets for each office's input.

Please use the attached document to write your inputs and send them to me No Later Than Thursday, March 17th. I will gather all your inputs and discuss with Mike and Stu on which will be the final list of inputs from DE that will be provided to Brett for the final SPO Report.

Note that only secondary offices (NSIR, SBCR, SECY, OCA, and OPA) need us to identify means of communications (e.g., Periodic coordination via meetings or teleconferences on specific projects). Also, if you have comments on *areas of improvement*, please identify them separately as these need to be discussed at an SES to SES manager level.

A good example of input is:

- Maintains excellent working relationship in specifying new user need requirements such as those for the thermal-hydraulic/neutronics modeling of transients in reactors with once through steam generators. Provides valuable feedback and constructive comments on RES products intended for NRO. Continues to enhance efficiency in model development process by securing data from licensees for extended power uprate plant decks. (DSA/CDB)

Let me know if you have any questions. Thanks.

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

DM/4

E-mail Richard.Rivera-Lugo@nrc.gov



Please consider the Environment before printing this e-mail.

Bozin, Sunny

From: Pace, Patti
Sent: Monday, March 14, 2011 10:48 AM
To: Schwarz, Sherry; Sprogeris, Patricia; Hudson, Sharon; Belmore, Nancy; Pulley, Deborah; Mayberry, Theresa; Quesenberry, Jeannette; Sosa, Belkys; Nieh, Ho; Blake, Kathleen; Herr, Linda; Garland, Stephanie; Cianci, Sandra
Cc: Dhir, Neha; Coggins, Angela; Batkin, Joshua; Gibbs, Catina; Speiser, Herald
Subject: 11:00AM Hearing Prep Pushed to 11:30AM
Importance: High

Good Morning,

The Hearing Prep Meeting scheduled for this morning at 11:00AM in the Chairman's conference room will be postponed to 11:30A due to a conflict on the Chairman's calendar. I will alert you right away if we need to further change or cancel this meeting, we may need to do so with little notice. Please keep an eye on email for updates. Also, please note that Eric Leeds and Mike Johnson will lead this briefing as Marty Virgilio is at the Ops center all day.

Thanks,

Patti Pace
Assistant to Chairman Gregory B. Jaczko
U.S. Nuclear Regulatory Commission
301-415-1820 (office)
301-415-3504 (fax)

DM/5

Bozin, Sunny

From: Pace, Patti
Sent: Monday, March 14, 2011 11:36 AM
To: Schwarz, Sherry; Sprogeris, Patricia; Hudson, Sharon; Belmore, Nancy; Pulley, Deborah; Mayberry, Theresa; Quesenberry, Jeannette; Sosa, Belkys; Nieh, Ho; Blake, Kathleen; Herr, Linda; Garland, Stephanie; Cianci, Sandra
Cc: Dhir, Neha; Coggins, Angela; Batkin, Joshua; Gibbs, Catina; Speiser, Herald
Subject: Both Hearing Prep Meetings Canceled for Today
Importance: High

Sorry for the short notice.

Thanks,

Patti Pace
Assistant to Chairman Gregory B. Jaczko
U.S. Nuclear Regulatory Commission
301-415-1820 (office)
301-415-3504 (fax)

DM/6

Hogan, Rosemary

From: Graves, Herman
Sent: Wednesday, March 16, 2011 11:24 AM
To: RES_DE_SGSEB; Ali, Syed; Murphy, Andrew
Subject: FW: Second Workshop on U.S. Nuclear Power Plant Life Extension R&D - Presentations

TO ALL:

If you are interested in looking at the presentations click on the link at the bottom of page.

<<Herman>>

<<301.251.7625>>

mail to: Herman.Graeves@nrc.gov

From: Peggy A Shiffer [<mailto:Peggy.Shiffer@inl.gov>] **On Behalf Of** Ronaldo H Szilard
Sent: Wednesday, March 16, 2011 10:54 AM
To: Richard.Reister@nuclear.energy.gov
Cc: Ronaldo H Szilard
Subject: Second Workshop on U.S. Nuclear Power Plant Life Extension R&D - Presentations

Dear All,

Presentations from the "Second Workshop on U.S. Nuclear Power Plant Life Extension Research and Development" are now available on the Light Water Reactor Sustainability (LWRS) Program website (<http://www.inl.gov/lwrs/>), a direct link to this information is provided below. This workshop (also known as the LB60 workshop) was sponsored by DOE, NRC and NEI and was held during February 22 – 24, 2011 at the L'Enfant Plaza Hotel in Washington, D.C.

We would like to receive your feedback about the workshop. Do you have any comments and/or suggestions with respect to (1) the venue and organization of the workshop, (2) technical content of the presentations, and (3) suggested topics or recommended changes for a future workshop.

Sincerely,

Ronaldo Szilard

https://inlportal.inl.gov/portal/server.pt/community/lwrs_program/442/program_documents

DM/7

Hogan, Rosemary

From: Rivera-Lugo, Richard
Sent: Wednesday, March 16, 2011 2:15 PM
To: Graves, Herman
Cc: Hogan, Rosemary
Subject: ACTION: ACRS Biennial Review and ROMA Update
Attachments: Table for ACRS Biennial Review.xlsx; Project Classification for ACRS Table.docx

Importance: High

Herman,

Was this action assigned to anyone in particular from SGSEB?

The information needed to complete Task 2 is available in our SharePoint site, and as far as I am aware, it is pretty accurate. That should ease the pain of having to check each JCN in ROMA.

Let me know who will take care of this for SGSEB so I can provide more detailed instructions about the spreadsheet that needs to be prepared, as this is due to me on March 24th (next Thursday).

Thanks,
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: Rivera-Lugo, Richard
Sent: Monday, March 14, 2011 4:32 PM
To: Csontos, Aladar; Gavrilas, Mirela; Boyce, Tom (RES); Sydnor, Russell; Koshy, Thomas; Hogan, Rosemary; Graves, Herman
Cc: Case, Michael; Richards, Stuart
Subject: ACTION: ACRS Biennial Review and ROMA Update
Importance: High

--- Very Important Action ---

Branch Chiefs,

All divisions have been issued a ticket to provide information for the ACRS Biennial Review of the projects at the Office of Research, and we will also take advantage of this task to update the information from ROMA for all of them. I have located in the G drive a folder titled ACRS Biennial Review 2011 (this is a hyperlink) which contains an Excel spreadsheet that lists all of projects from RES. This spreadsheet can be sorted by Division and Branch to view only the content that is relevant to your branches (the table is attached for your convenience).

We need to use this spreadsheet to work on the following tasks for the ACRS Review:

DM/8

- **Task 1:** Enter the relevant technical area from the dropdown list provided by ACRS. There are 15 technical areas and they are available in the drop down menu from the spreadsheet (column N), and are also listed in the attached document.
- **Task 2:** Review the text in the Scope, Regulatory Use, and Objective fields to ensure it's up to date. If those fields are modified, add a "Yes" to Column O, so that the new information can be put into ROMA.
- **Task 3:** Review the Current User Need entry and enter the correct value in the Proposed User Need field.

I think that the best way to handle the organization of these tasks will be to have each of the BCs from DE to save a copy of the spreadsheet with the updated information from their branch in the abovementioned folder. Please remember to save the copy with the name of your branch so that I can sort out the projects from your branch and gather the updated information (e.g. Table for ACRS Biennial Review_DE_SGSEB.xlsx).

This ticket has to be closed by the end of the month, which is why I am requesting that you update your information No Later Than COB Thursday, March 24, 2011. If you have any questions please contact me and I will gladly give you more detailed instructions on how to provide your information and update the spreadsheet. Thanks.

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.

Dion, Jeanne

From: Ibarra, Jose
Sent: Thursday, March 17, 2011 4:29 PM
To: Beasley, Benjamin; Peters, Sean; Ott, William; Demoss, Gary; Salley, MarkHenry; Xing, Jing; Kuritzky, Alan
Cc: Coyne, Kevin; Dion, Jeanne; Armstrong, Kenneth; Rivera-Lugo, Richard
Subject: FIOA Request from Associated Press

All,

As I am heading out the door, I have just received a ticket for on a FOIA. The Associated Press is requesting copies of all internal NRC communication associated with the Japanese nuclear accident. I have no time to give you a copy of the request but will on Monday. The due date is March 30. This is a heads up.

Jose

DM/9

Dion, Jeanne

From: Parks, Jazel
Sent: Tuesday, March 22, 2011 12:25 PM
To: Rini, Brett; Dion, Jeanne; Ibarra, Jose; Armstrong, Kenneth; Rivera-Lugo, Richard
Subject: RE: Expedited Processing for Requests FOIA-2011-0118, FOIA-2011-0119, and FOIA-2011-0120

Yes that would be very helpful

From: Rini, Brett
Sent: Tuesday, March 22, 2011 9:12 AM
To: Parks, Jazel; Dion, Jeanne; Ibarra, Jose; Armstrong, Kenneth; Rivera-Lugo, Richard
Subject: RE: Expedited Processing for Requests FOIA-2011-0118, FOIA-2011-0119, and FOIA-2011-0120

Do you recommend that staff set aside any e-mails that could be responsive to the FOIA now, just in case we are asked about it in the future?

From: Parks, Jazel
Sent: Friday, March 18, 2011 2:35 PM
To: Dion, Jeanne; Ibarra, Jose; Armstrong, Kenneth; Rini, Brett; Rivera-Lugo, Richard
Subject: FW: Expedited Processing for Requests FOIA-2011-0118, FOIA-2011-0119, and FOIA-2011-0120

FYI

I do not know if this request will be reopened in the future but in the event that it is, we need to be prepared to respond to it.

Thanks!!!!

From: Valentin, Andrea
Sent: Friday, March 18, 2011 2:33 PM
To: Kardaras, Tom
Cc: Parks, Jazel
Subject: Fw: Expedited Processing for Requests FOIA-2011-0118, FOIA-2011-0119, and FOIA-2011-0120

FYI

Sent from my NRC Blackberry
Andrea Valentin

(b)(6)

From: Sheron, Brian
To: Valentin, Andrea; Uhle, Jennifer; Gibson, Kathy; Scott, Michael; Case, Michael; Richards, Stuart; Coe, Doug; Coyne, Kevin
Cc: Dion, Jeanne
Sent: Fri Mar 18 14:08:17 2011
Subject: Re: Expedited Processing for Requests FOIA-2011-0118, FOIA-2011-0119, and FOIA-2011-0120

Trip Rothchild turned it off. We don't have to deal with it until after the Japan crisis subsides.

DM/10

From: Valentin, Andrea

To: Sheron, Brian; Uhle, Jennifer; Gibson, Kathy; Scott, Michael; Case, Michael; Richards, Stuart; Coe, Doug; Coyne, Kevin

Cc: Dion, Jeanne

Sent: Fri Mar 18 13:25:57 2011

Subject: FW: Expedited Processing for Requests FOIA-2011-0118, FOIA-2011-0119, and FOIA-2011-0120

Per Jennifer's request at the 8:45, Tom Kardaras looked into trying to get the Japan FOIA turned off. Based on the highlighted portions of Tom's summary below, we need senior level intervention to get this turned off since the FOIA Office accepted it as an expedited request. I'll also call Mary Muessle and see if we have any recourse.

Andrea Valentin, Acting Director
Program Management, Policy Development and Analysis Staff
Office of Nuclear Regulatory Research
301-251-7497

From: Kardaras, Tom

Sent: Friday, March 18, 2011 12:31 PM

To: Valentin, Andrea

Subject: FW: Expedited Processing for Requests FOIA-2011-0118, FOIA-2011-0119, and FOIA-2011-0120

See attachment

Andrea,

I contacted the FOIA office and spoke with Mary Jean Raphael and Jazel via teleconference. I explained the concern we had about meeting the timeliness requirement (FOIA response provided in 10-days and 90% of the requests received in a given month meet the timeliness requirement) while continuing to work in a crisis mode and our desire to get it stopped. Mary Jean explained that the timeliness requirement can't be stopped and because this specific FOIA request was granted expedited processing by the FOIA office, it must take priority over all other non-expedited FOIA request(s) currently handled within RES. That includes the SOARCA request too since it is considered a non-expedited item. During the discussion, there was no agreement reached to stop the timeliness requirement. I was provided a copy of the attached e-mail and told to do the best we can in responding to the request. The ticket that went out to Divisions, RES2010519, is currently still Open and issued to the Divisions. I did sit down with Leslie and explain what was happening on this. I can pursue this matter further if you would like but at this point, I would recommend a discussion at the senior level. Finally, I attached the FOIA and Ticket to this e-mail message in case you want to review the ticket and what the Associated Press (AP) is requesting.

Your thoughts?

Regards,

Tom Kardaras, Chief

Information Technology and Infrastructure Branch

Program Management, Policy Development and Analysis Staff

Office of Nuclear Regulatory Research

(o) 301-251-7667

From: Raphael, Mary Jean

Sent: Friday, March 18, 2011 10:48 AM

To: Kardaras, Tom

Subject: FW: Expedited Processing for Requests FOIA-2011-0118, FOIA-2011-0119, and FOIA-2011-0120

From: Sealing, Donna

Sent: Friday, March 18, 2011 9:18 AM

To: Muessle, Mary; Abraham, Susan; Champion, Bryan; Uhle, Jennifer; Doane, Margaret; Hayden, Elizabeth; Joosten, Sandy

Cc: Clayton, Kathleen; Jaegers, Cathy; Wimbush, Andrea; Raynor, Catherine; Craver, Patti; Gorham, Tajuan; Walker(NRR), Sandra; Parks, Jazel; Isakovic, Nadja; Mitchell, Linda; Chimood, Jane; Shannon, Valerie; Champ, Billie; Mike, Linda; McKelvin, Sheila; FOIA Resource; Raphael, Mary Jean; Nichols, Russell

Subject: Expedited Processing for Requests FOIA-2011-0118, FOIA-2011-0119, and FOIA-2011-0120

Good Morning All,

We have received three FOIA requests from the Associated Press for information related to the event in Japan. The requests are FOIA-2011-0118, FOIA-2011-0119, and FOIA-2011-0120. These requests have been granted expedited processing. This means that they go to the head of the line and must be processed before any other FOIA requests you may already have. You are receiving this email because your office has been assigned one or more of these expedited requests. While I recognize that you have many competing priorities in these serious and dynamic times, I would appreciate your timely response to these requests.

Thank you for your assistance in processing these requests and please keep my office informed of your search and review efforts.

Donna Sealing
FOIA/Privacy Act Officer

From: Droggitis, Spiros
Sent: Tuesday, March 22, 2011 4:46 PM
To: Benowitz, Howard
Subject: RE: NRC EP rules and authority

Thanks Howard, this is great. Take care, Spiros

From: Benowitz, Howard
Sent: Tuesday, March 22, 2011 4:43 PM
To: Droggitis, Spiros
Subject: NRC EP rules and authority

Spiros:

Attached is a PDF of the 1980 Federal Register notice of the final rule amending the NRC's emergency preparedness regulations following TMI.

The attached final rule FRN (on page 55406) explains the separation of authorities between the NRC and FEMA, based on President Carter's December 7, 1979, directive (which can be found in NUREG-0980, Vol. 1), and the subsequent identification of each agency's responsibilities through an MOU. The most recent version of this MOU is attached hereto. (The MOU, at page 613, second column, includes this relevant sentence: "While the Atomic Energy Act does not specifically require emergency plans and related preparedness measures, the NRC requires consideration of overall emergency preparedness as a part of the licensing process.")

The quote in Kathy Dedrick's email contains two distinct authorities: "statutory responsibility for the radiological health and safety of the public" and "overall authority for both onsite and offsite emergency preparedness." The first authority comes from the AEA. The second authority is detailed in the MOU with FEMA and in 10 CFR 50.47(a)(2).

Before issuing a license, the NRC must make a determination that "there is reasonable assurance that adequate protective measures can and will be taken in the event of a radiological emergency." 10 CFR 50.47(a)(1)(i). "The NRC will base its finding on a review of the Federal Emergency Management Agency (FEMA) findings and determinations as to whether State and local emergency plans are adequate and whether there is reasonable assurance that they can be implemented, and on the NRC assessment as to whether the applicant's onsite emergency plans are adequate and whether there is reasonable assurance that they can be implemented." 10 CFR 50.47(a)(2).

Section 50.47(b) provide the standards that onsite and offsite emergency response plans must meet. These standards were developed with FEMA as part of the 1980 final rule and can also be found in FEMA's regulations at 44 CFR 350.5. Appendix E to 10 CFR Part 50 contains the information license applicants are required to include in their license applications. Offsite response plans are among the required information. Under 10 CFR 50.54(q), NRC licensees must continue to meet these standards and requirements as a condition of their license.

Hope this helps.

Howard

DM/11

RU

TMI CLEANUP

BY JEFF BARKER

WASHINGTON (AP) -- SEVENTY PERCENT OF THE MATERIAL INSIDE THE CORE OF THE CRIPPLED THREE MILE ISLAND NUCLEAR REACTOR MAY HAVE LIQUEFIED DURING THE MARCH 1979 ACCIDENT, SAYS A GOVERNMENT SCIENTIST.

THE LIQUEFIED MATERIAL INCLUDED FUEL, PARTS OF THE CORE STRUCTURE AND THE TUBES IN WHICH THE FUEL IS CONTAINED, SAID DON MCPHERSON, A DEPARTMENT OF ENERGY OFFICIAL WHO MANAGES THE TMI UNIT-2 ACCIDENT EVALUATION PROGRAM.

HIS REMARKS CAME DURING AN INTERVIEW IN WHICH HE EXPANDED ON A PRESENTATION TUESDAY TO THE NUCLEAR REGULATORY COMMISSION. THE COMMISSION HAS BEEN MONITORING THE \$1 BILLION TMI CLEANUP.

MCPHERSON SAID BETWEEN 5 PERCENT AND 10 PERCENT OF THE FUEL MELTED AFTER REACHING A TEMPERATURE OF 5,100 DEGREES. MUCH MORE -- PERHAPS 60 PERCENT -- BEGAN TO DISSOLVE AND MELD WITH A METALLIC ELEMENT IN THE CORE AFTER REACHING 3,050 DEGREES, HE SAID.

MCPHERSON'S ESTIMATES CAME 13 MONTHS AFTER THE FIRST PUBLIC DISCLOSURE THAT URANIUM FUEL HAD MELTED DURING THE ACCIDENT. PREVIOUS STUDIES INDICATED ONLY THAT SOME METAL PARTS IN THE CORE HAD MELTED.

INDUSTRY CRITICS AND OPPONENTS OF THE NUCLEAR INDUSTRY SAID THE 1985 FINDING MEANT THE ACCIDENT WAS MORE SEVERE THAN HAD BEEN BELIEVED.

GENERAL PUBLIC UTILITIES NUCLEAR CORP., WHICH OPERATES THE PLANT NEAR HARRISBURG, PA., HAS REFUSED TO ESTIMATE HOW MUCH FUEL OR CORE MATTER MELTED.

ASKED ABOUT MCPHERSON'S REMARKS, GPU NUCLEAR SPOKESMAN DOUG BEDELL SAID HE DID NOT KNOW HOW MUCH OF THE FUEL OR CORE MATERIAL MELTED.

"WE DON'T HAVE COMPLETE ACCESS," HE SAID.

AP-WX-03-12-86 1600EST

PRELIMINARY NOTIFICATION

March-28, 1979

PRELIMINARY NOTIFICATION OF EVENT OR UNUSUAL OCCURRENCE--PNO-79-67

This preliminary notification constitutes EARLY notice of event of POSSIBLE safety or public interest significance. The information presented is as initially received without verification or evaluation and is basically all that is known by IE staff on this date.

Facility: Three Mile Island Unit 2
Middletown, Pennsylvania
(Docket No. 50-320)

Subject: REACTOR SCRAM FOLLOWED BY A SAFETY INJECTION AT THREE MILE
ISLAND - UNIT 2

The licensee notified Region I at approximately 7:45 AM of an incident at Three Mile Island Unit 2 (TMI-2) which occurred at approximately 4:00 AM at 98% power when the secondary feed pumps tripped due to a feedwater polishing system problem. This resulted in a turbine trip and subsequent reactor trip on High Reactor Coolant Pressure. A combination of Feed Pump Operation and Pressurizer Relief - Steam Generator relief valve operation caused a Reactor Coolant System (RCS) cooldown. At 1600 psig, Emergency Safeguards Actuation occurred. All ECCS components started and operated properly. Water level increased in the Pressurizer and Safety Injection was secured manually approximately 5 minutes after actuation. It was subsequently resumed. The Reactor Coolant Pumps were secured when low net positive suction head limits were approached.

About 7:00 AM, high activity was noted in the RCS Coolant Sample Lines (approximately 600 mr/hr contact readings). A Site Emergency was then declared. At approximately 7:30 AM, a General Emergency was declared based on High Radiation levels in the Reactor Building. At 8:30 AM site boundary radiation levels were reported to not be significant (less than 1 mr/hr). The source of activity was stated to be failed fuel as a result of the transient, and due to a known previous primary to secondary leak in Steam Generator B.

The Region I Incident Response Center was activated at 8:10 AM and direct communications with the licensee and IE:Headquarters was established. The Response Team was dispatched at 8:45 AM and arrived at the site at 10:05 AM.

At 10:45 AM the Reactor Coolant System Pressure was being held at 1950 psig with temperature at 220°F in the cold leg. By 10:45 AM, radiation levels of 3 mr/hr had been detected 500 yards offsite.

CONTINUED

March 28, 1979
PNO-79-67

There is significant media interest at the present time because of concern about potential offsite radiation/contamination. The Commonwealth of Pennsylvania and EPA have been informed. Press contacts are being made by the licensee and NRC.

Contact: GKlingler, IE x28019 FNolan, IE x28019 SEBryan, IE x28019

Distribution: Transmitted H St ^{3:45}~~3:35~~

Chairman Hendrie	Commissioner Bradford	S. J. Chilk, SECY
Commissioner Kennedy	Commissioner Ahearne	C. C. Kammerer, CA
Commissioner Gilinsky		(For Distribution)

Transmitted: MNBB 3:50

L. V. Gossick, EDO
H. L. Ornstein, EDO
J. J. Fouchard, PA
N. M. Haller, MPA
R. G. Ryan, OSP
H. K. Shapar, ELD

P. Bldg 3:40
H. R. Denton, NRR
R. C. DeYoung, NRR
R. J. Mattson, NRR
V. Stello, NRR
R. S. Boyd, NRR
SS Bldg 3:52
W. J. Dircks, NMSS

J. G. Davis, IE
Region I 3:58

(MAIL)
J. J. Cummings, OIA
R. Minogue, SD

PRELIMINARY NOTIFICATION

B-60

PRELIMINARY NOTIFICATION

March 29, 1979

PRELIMINARY NOTIFICATION OF EVENT OR UNUSUAL OCCURRENCE--PNO-79-67A

This preliminary notification constitutes EARLY notice of event of POSSIBLE safety or public interest significance. The information presented is as initially received without verification or evaluation and is basically all that is known by IE staff on this date.

Facility: Three Mile Island Unit 2
Middletown, Pennsylvania (DN 50-320)

Subject: NUCLEAR INCIDENT AT THREE MILE ISLAND - UNIT 2

This supplements PNO-79-67 dated March 28, 1979.

As of 3:30 p.m., on March 28, 1979, the plant was being slowly cooled down with Reactor Coolant System (RCS) pressure at 450 psi, using normal letdown and makeup flow paths. The bubble has been collapsed in the A Reactor Coolant Loop hot leg, and some natural circulation cooling has been established. Pressurizer level has been decreased to the high range of visible indication, and some heaters are in operation. The secondary plant was being aligned to draw a vacuum in the main condenser and use the A Steam Generator for heat removal. The facility plans to continue a slow (30°F/hr) cooldown, until the Decay Heat Removal System can be placed in operation at 350 psi RCS pressure, 350°F RCS temperature in 15-18 hours.

As of 3:30 p.m., a plume approximately ½ mile wide and reading generally 1 mCi/hr was moving to the north of the plant. The ARM's helicopter is being used to define the length of the plume. Airborne iodine levels of up to 1×10^{-8} uCi/ml have been detected in Middletown, Pennsylvania, which is located north of the site.

Media interest is continuing. The Commonwealth of Pennsylvania is being kept informed by plant personnel.

Contact: GKlingler, IE x28019 FNolan, IE x28019 SEBryan, IE x28019

Distribution: Transmitted H St *NOV 23 10:30*

Chairman Hendrie
Commissioner Kennedy
Commissioner Gilinsky

Commissioner Bradford
Commissioner Ahearne

S. J. Chilk, SECY
C. C. Kammerer, CA
(For Distribution)

Transmitted: MNBB *10:25*
L. V. Gossick, EDO
H. L. Ornstein, EDO
J. J. Fouchard, PA
N. M. Haller, MPA
R. G. Ryan, OSP
H. K. Shapar, ELD

P. Bldg *10:32*
H. R. Denton, NRR
R. C. DeYoung, NRR
R. J. Mattson, NRR
V. Stello, NRR
R. S. Boyd, NRR
SS Bldg *10:28*
W. J. Dircks, NMSS

J. G. Davis, IE
Region *I* *10:33*

(MAIL)
J. J. Cummings, OIA
R. Minogue, SD

PRELIMINARY NOTIFICATION

PRELIMINARY NOTIFICATION

March 30, 1979

PRELIMINARY NOTIFICATION OF EVENT OR UNUSUAL OCCURRENCE--PNO-79-67B

This preliminary notification constitutes EARLY notice of event of POSSIBLE safety or public interest significance. The information presented is as initially received without verification or evaluation and is basically all that is known by IE staff on this date.

Facility: Three Mile Island Unit 2
Middletown, Pennsylvania (DN 50-320)

Subject: Nuclear Incident at Three Mile Island

Plant Status

Three Mile Island Unit 2 is continuing to remove decay heat through A-loop steam generator using one reactor coolant pump in that loop for coolant circulation. The reactor coolant pressure and temperature were stable and under control throughout the night of March 29. There has been some difficulty in maintaining coolant letdown flow due to resistance in the purification filters. The licensee notified IE at about 11:00 p.m. on March 29 that they expected to remain in this cooling mode for at least 24 hours.

The licensee's engineering staff was requested by NRR to obtain a better estimate of the volume of the noncondensable "bubbles" in the reactor coolant system. There are apparently two such bubbles one in the pressurizer that has been intentionally established for control of pressure and level, and one in the reactor vessel head caused by the accumulation of noncondensable gases from failed fuel and radiolytic decomposition of water. The estimate is to be obtained by correlating pressurizer pressure and level indications over the past hours of stable operation. The volume of the bubble in the reactor vessel is of interest in assuring that sufficient volume remains in the upper head for collection of more noncondensable gases arising from continued operation in the present cooling mode as well as to assess the potential for movement of the bubble during a switchover to decay heat removal operation.

The licensee believes it is prudent to remain in the present cooling mode due to the potential for leakage of highly radioactive coolant from the decay heat removal system into the auxiliary building, movement of noncondensable gases into the reactor coolant loop, and boiling in the core when the reactor coolant pump is shut down.

CONTINUED

Fuel Damage

Preliminary assessment of the extent of fuel damage from a reactor coolant sample taken at approximately 5:00 p.m. on March 29 indicates significant releases of iodine and noble gases from the fuel. A 100 milliliter sample taken from the primary coolant system via a letdown line was measured at about 1,000 R/hr on contact (70-80 R/hr at one foot and 10-30 R/hr at three feet). Preliminary analysis of a diluted sample in the IE mobile laboratory indicated fission product concentrations of about 8×10^5 microcuries per milliliter. The sample will be flown to Bettis Laboratory for further analysis.

Thermocouple readings of coolant temperature at the outlet of the instrumented fuel assemblies indicate potential local core damage, possibly in one quarter of the total of 177 fuel assemblies and generally in the center of the core. Of the 52 readings at 5:00 a.m. on March 30, one was above the coolant saturation temperature of about 550°F, 7 were above 350°F, and 2 were off-scale, indicating temperatures higher than 700°F. Upon request of NRR, Babcock and Wilcox is developing a procedure for use by the licensee in taking direct potentiometer readings from the off-scale thermocouples since the temperature scale limitation of 700°F is controlled by the process computer, not the thermocouple itself.

Reactor Coolant System (RCS) Parameters

The RCS parameters have remained relatively stable during the period. Gradual RCS cooldown continued to about 1:30 a.m., March 30, when temperature was slightly increased to allow additional margin between RCS operating parameters and Technical Specification minimum pressurization limits. Following are the primary system parameters over this period:

	10:00 a.m. 3/29/79	7:00 p.m. 3/29/79	12:01 a.m. 3/30/79	3:00 a.m. 3/30/79	5:00a.m. 3/30/79
Pressurizer Level (inches)	348	321	326	342	354
Pressurizer Pressure (psi)	863	945	1023	1055	1053
Pressurizer Temperature (°F)	529	542	551	556	557
Loop A Core					
Inlet Temperature (°F)	281	277	275	278	274
Loop B Core					
Inlet Temperature (°F)	281	277	275	278	274

CONTINUED

Environmental Status

Two aerial surveys were conducted during the evening of March 29. The first flight was made about 8:15 p.m. during which measurements were taken in a circle around the site with a radius of about eight miles. No defined plume of radioactivity was detected, but residual pockets of radioactivity were identified at various points where the measured levels ranged from .025 to .050 milliroentgens per hours. (Natural background levels are about .005 to .015 milliroentgens per hour.) During the second flight, at about 10:30 p.m., a plume was detected northwest of the plant with a width equal to and confined within the boundaries of the river. The plume was touching down about one mile from the plant at Hill Island and then splitting into two parts - one on each side of Hill Island. Measurements at the east shoreline of the river, opposite Hill Island indicated about four milliroentgens per hour and at the shoreline on mile north of Hill Island near Olmstead Air Force Base about one milliroentgen per hour. Additional measurements at five miles from the plant were on the order of .010 milliroentgens per hour and are in agreement with the earlier flight.

During the early morning hours of March 30, an NRC monitoring team took radiation measurements from a vehicle traveling both sides of the Susquehanna River from 10 miles south of Three Mile Island to 4 miles north. Radiation levels were highest near Cly, a community just south of the facility on the west side of the river. The level at Cly was 0.15 milliroentgen per hour. All other locations had levels less than 0.05 milliroentgens per hour.

Other Information

At approximately 4:00 p.m. on March 29, two employees of Metropolitan Edison Co. received radiation exposures in excess of the quarterly limit of 3 rems. The employees, an operator and a chemist, entered the auxiliary building to collect a sample of primary coolant. Present estimates are that the operator received 3.1 rems and the chemist 3.4 rems.

The licensee released less than 50,000 gallons of slightly contaminated industrial wastes on March 29, 1979. This release was terminated at NRC request at approximately 6:00 p.m., March 29, 1979, because of concerns expressed by state representatives. At about 12:15 a.m. on March 30, NRC gave the licensee permission to resume releases of the slightly contaminated industrial wastes to the Susquehanna River. This action was coordinated with the office of the Governor of Pennsylvania and a press release was issued by the State. Representatives of the news media expressed concern that they were not informed of the planned resumption of the release prior to permission having been granted.

CONTINUED

March 30, 1979
PNO-79-67B

At 8:40 a.m., on March 30 the licensee began venting from the gaseous waste tanks. The impact of this operation is not yet known.

Contact: DThompson, IE x28111; EJordan, IE x 28111

Distribution: Transmitted H St 9:50

Chairman Hendrie
Commissioner Kennedy
Commissioner Gilinsky

Commissioner Bradford
Commissioner Ahearne

S. J. Chilk, SECY
C. C. Kammerer, CA
(For Distribution)

Transmitted: MNBB 10:02

L. V. Gossick, EDO
H. L. Ornstein, EDO
J. J. Fouchard, PA
N. M. Haller, MPA
R. G. Ryan, OSP
H. K. Shapar, ELD

P Bldg 10:15

H. R. Denton, NRR
R. C. DeYoung, NRR
R. J. Mattson, NRR
V. Stello, NRR
R. S. Boyd, NRR
(SS Bldg 10:42)
W. J. Dircks, NMSS

J. G. Davis, IE
Region IX 10:30

II, III, IV, V

(MAIL)

J. J. Cummings, OIA
R. Minogue, SD

RII: 12:07

RIII: 12:20

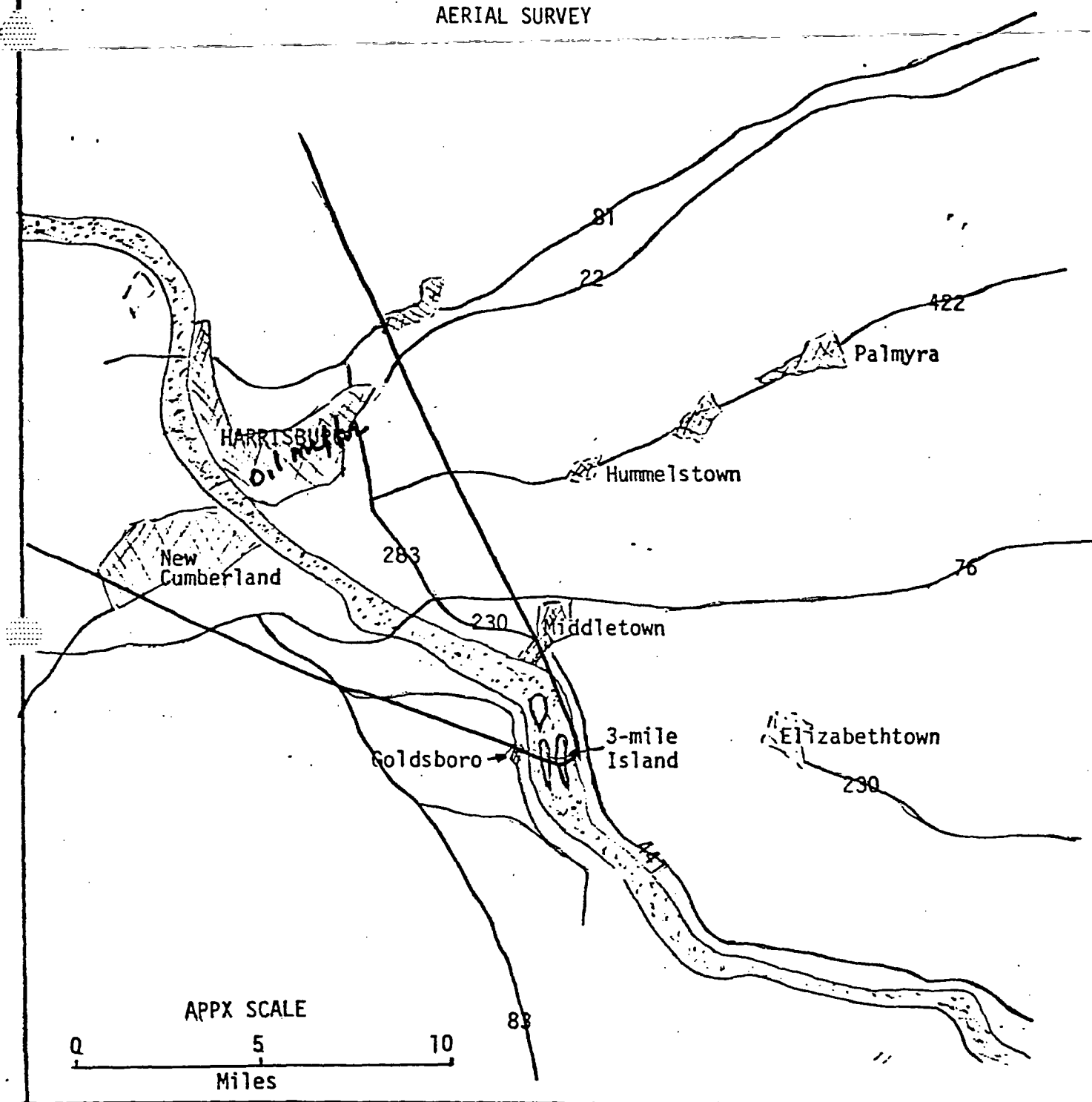
RIV: 12:55

RIV:

Attachments (7):
Aerial Survey (6)
Ground-Level Survey (1)

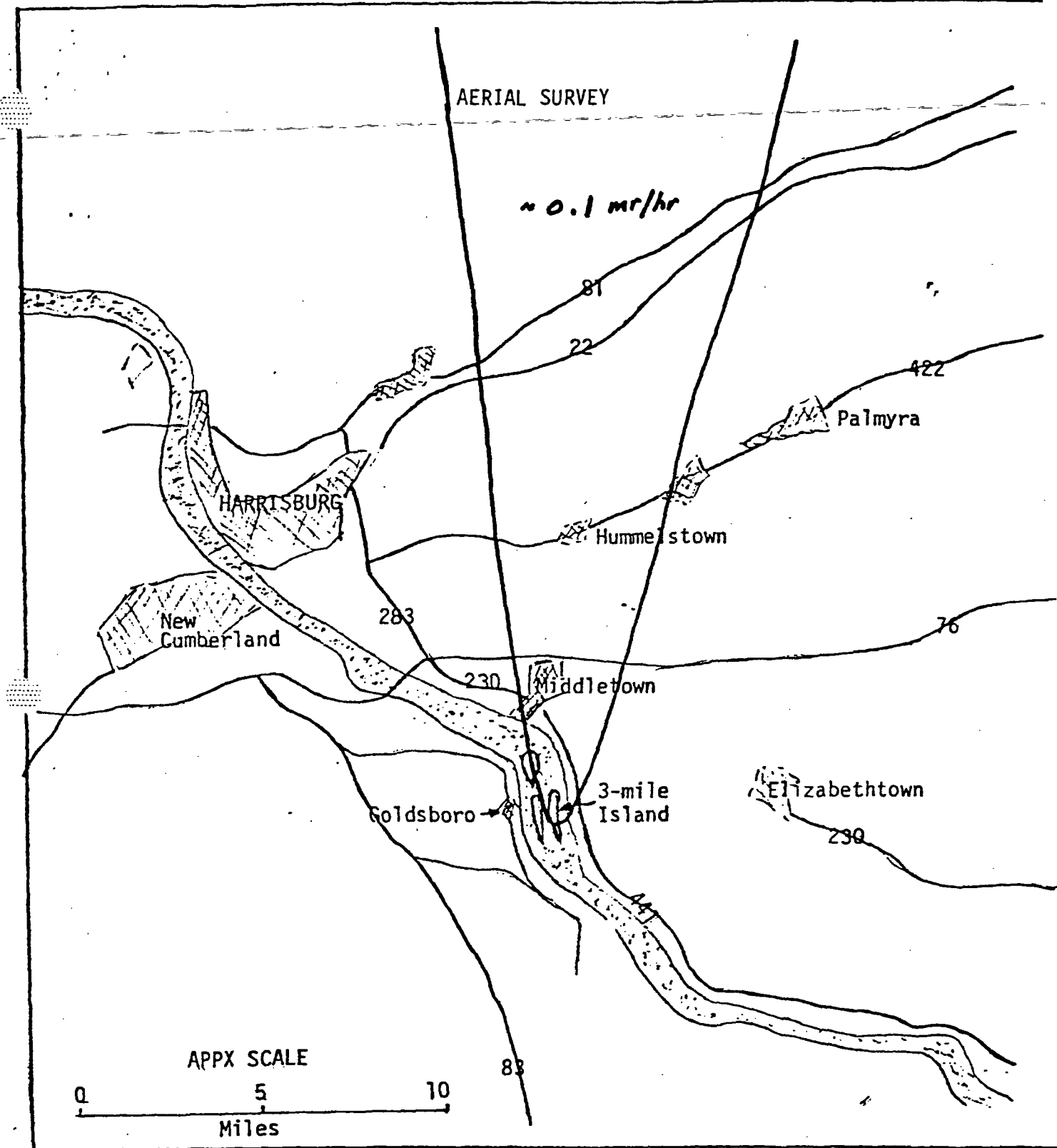
PRELIMINARY NOTIFICATION

AERIAL SURVEY



March 28, 1979 8:00 p.m.

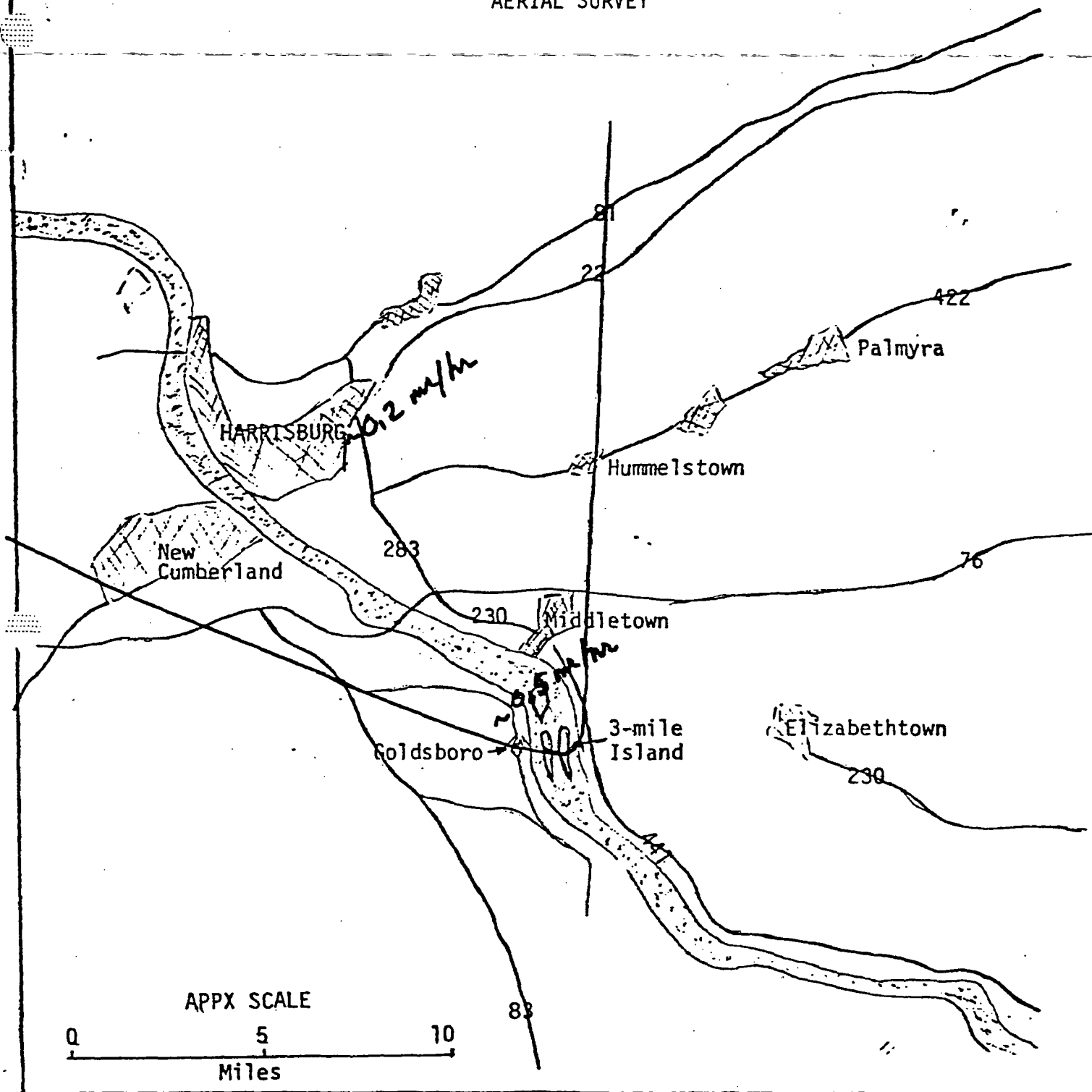
Plume in a N to NW direction. Primarily Xe-133.
Over Harrisburg, radiation measurements in the plume showed about 0.1 mr/hr. At 10 miles from the site, the plume was about 4-5 miles wide; top of plume at about 3000 feet.



March 28, 1979 4:30 p.m.

Plume in a N to NE direction, about 30° sector.
 Primarily Xe-133. At distance of about 16 miles,
 radiation measurements in the plume were about 0.1 mr/hr.

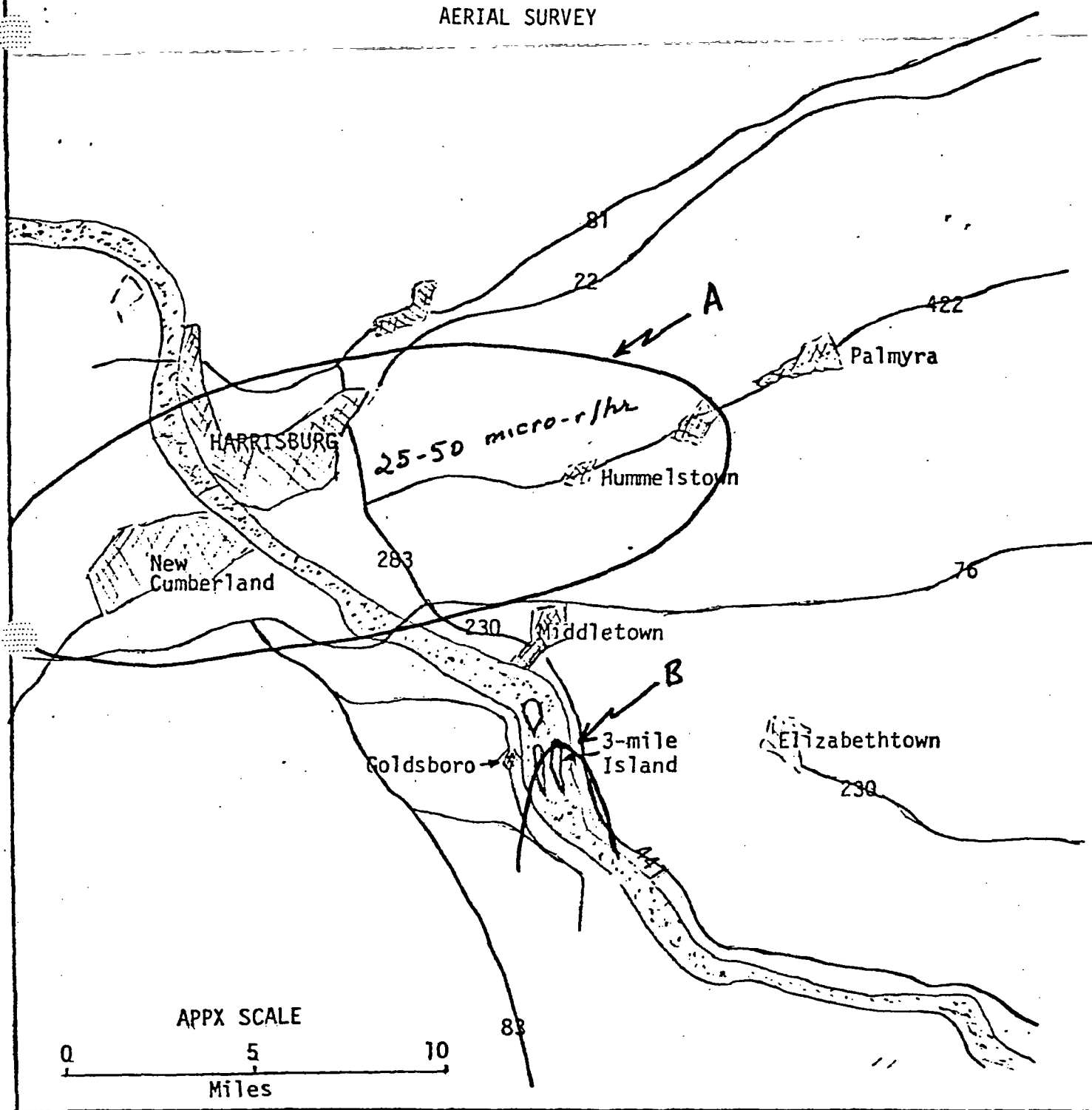
AERIAL SURVEY



March 29, 1979 10:45 a.m.

Plume in a N to NW direction. Primarily Xe-133.
Radiation measurements in the plume at about 10 miles
from plant in centerline of plume were 0.2 mr/hr; at
1 mile from plant, about 0.5 mr/hr maximum.

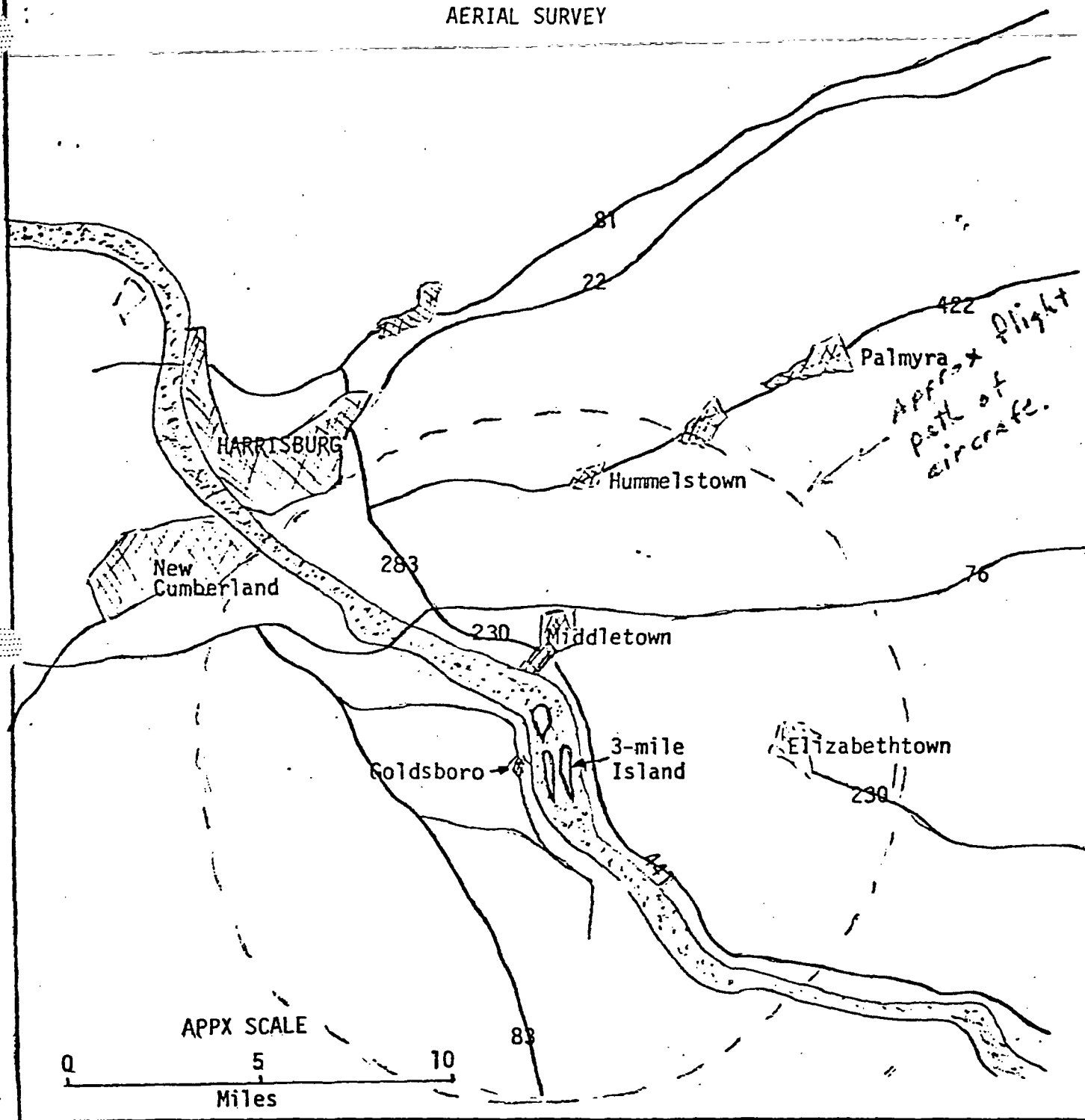
AERIAL SURVEY



March 29, 1979 5:00 p.m.

- A** Residual cloud (Xe-133) N to NW between Mechanicsburg and Hershey, Pennsylvania. Radiation measurements in the cloud in the microrentgen/hour range, highest readings in cloud center.
- B** Ground level measurements on the island indicated a plume in the southerly direction. Radiation measurements at fenceline south of plant were 10 mr/hr, and one-half mile south of fenceline, 0.5 mr/hr.

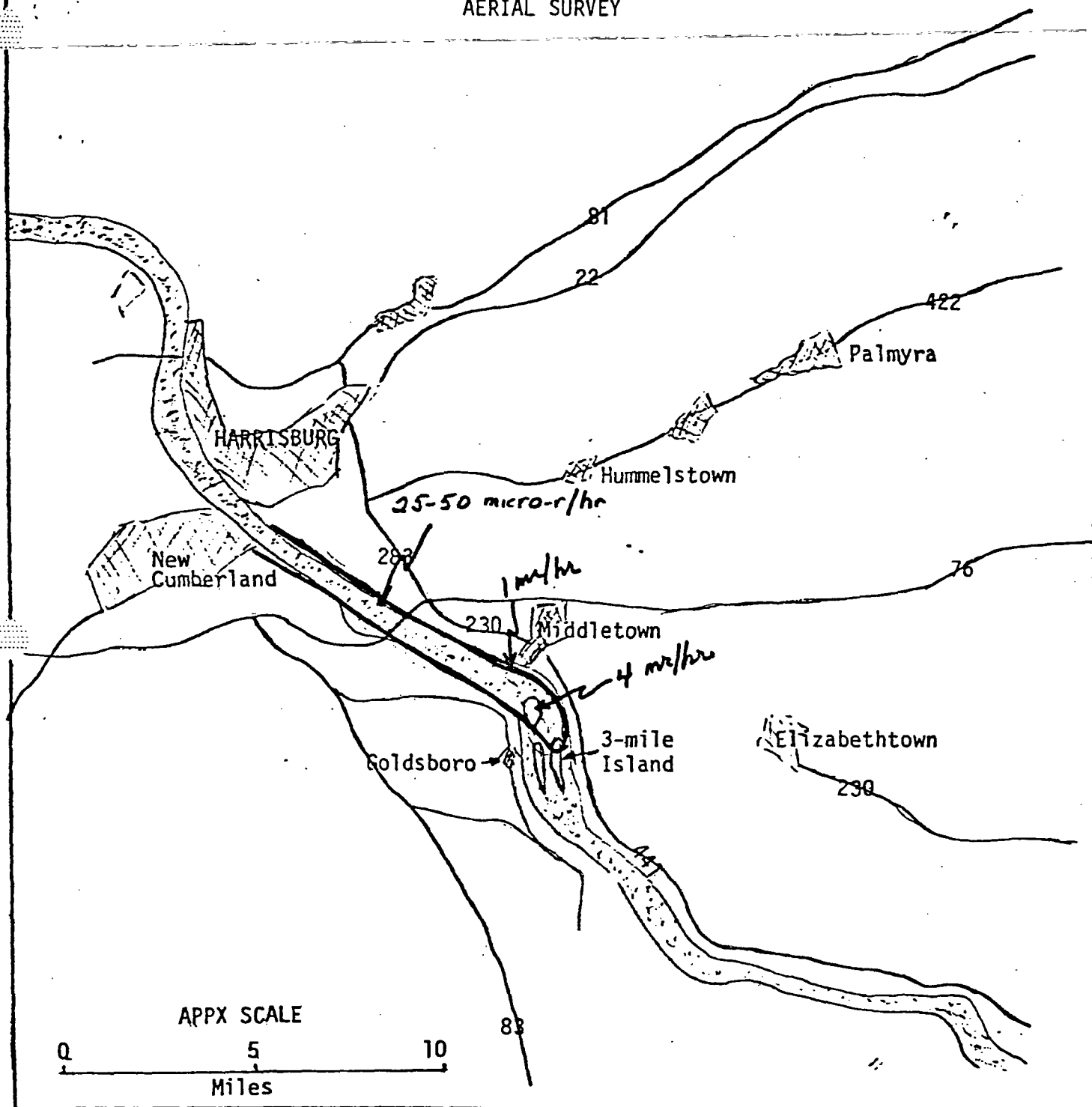
AERIAL SURVEY



March 29, 1979 8:00 p.m.

Survey aircraft circled the site at distance of about 8 miles at altitude of 1000 feet. No detectable plume; "pockets" of residual radioactivity were detected with radiation readings in the range of of 25 - 50 microrentgens/hour.

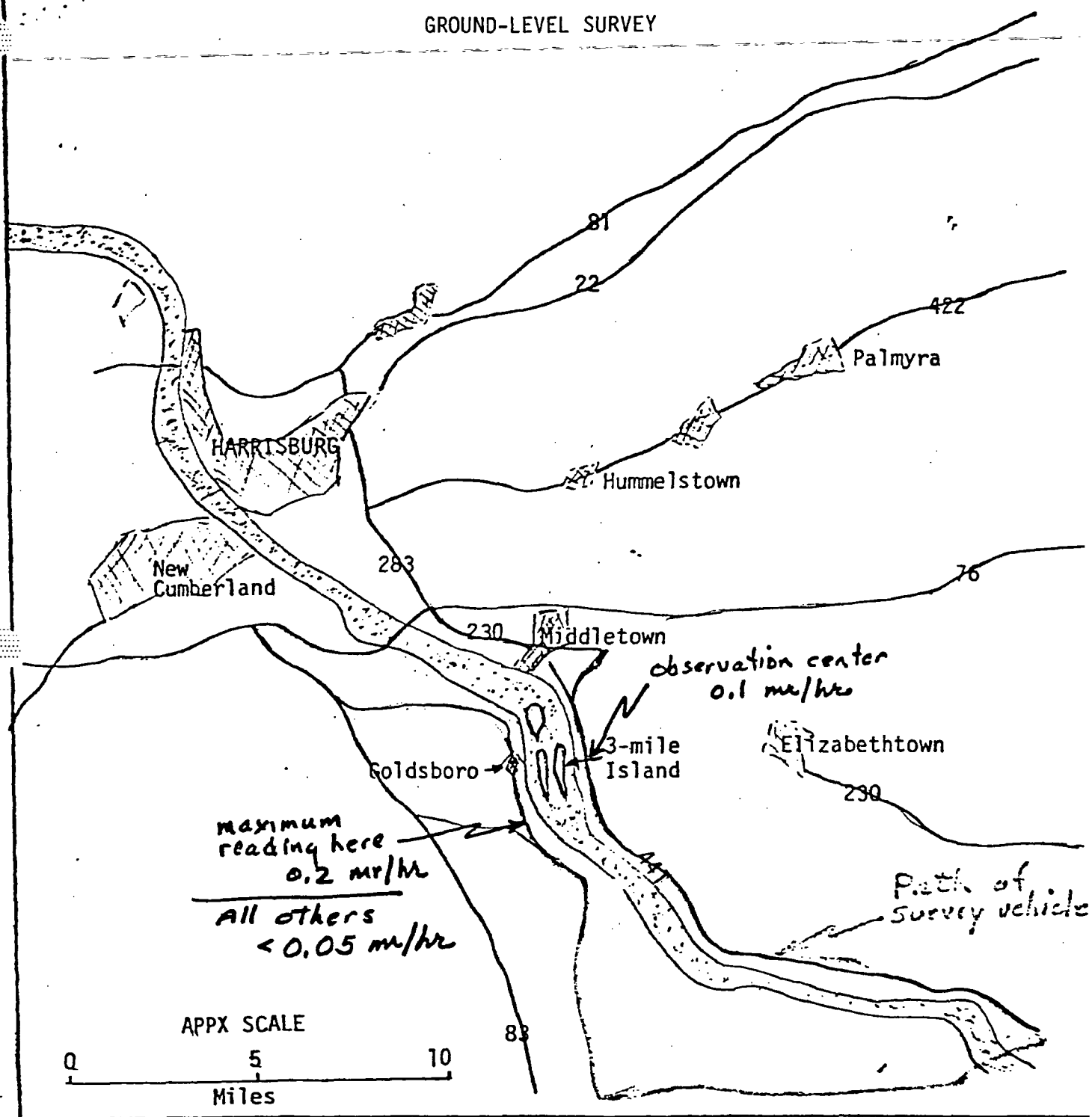
AERIAL SURVEY



March 29, 1979 10:30 p.m.

Plume in a NW direction, width about equal to width of river. Plume touches down about 1 mile from plant at Hill Island. Radiation measurements at east shore line at Hill Island, 4 mr/hr; one mile north of Hill Island, 1 mr/hr; and at five miles from the plant, 25 - 50 microrentgens/hr.

GROUND-LEVEL SURVEY



March 30, 1979 Time: approximately 4:00 a.m. - 5:30 a.m.

An NRC survey team took radiation measurements from a vehicle traveling both sides of the Susquehanna River.

Radiation levels were highest near Cly, a community just south of the plant on the west side of the river. The level at Cly was about 0.2 mr/hr. With the exception of the reading of 0.1 mr/hr at the Observation Center, the remainder of the readings on the route were less than 0.05 mr/hr.

March 30, 1979

PRELIMINARY NOTIFICATION OF EVENT OR UNUSUAL OCCURRENCE--PNO-79-67C

This preliminary notification constitutes EARLY notice of event of POSSIBLE safety or public interest significance. The information presented is as initially received without verification or evaluation and is basically all that is known by IE staff on this date.

Facility: Three Mile Island Unit 2
Middletown, Pennsylvania (DN 50-520)

Subject: NUCLEAR INCIDENT AT THREE MILE ISLAND

Plant Status

There have been intermittent uncontrolled releases of radioactivity into the atmosphere from the primary coolant system of Unit 2 of the Three Mile Island Nuclear Power Plant near Harrisburg, Pennsylvania. The licensee is attempting to stop the intermittent gaseous releases by transferring the radioactive coolant water into the primary containment building. The levels of radioactivity being measured have been as high as 20 to 25 millirem per hour in the immediate vicinity of the site at ground level. Off-site levels were a few milliroentgen.

At about 11:30 a.m. EST, the Chairman of the NRC has suggested to Governor Thornburg of the Commonwealth of Pennsylvania that pregnant women and pre-school children in an area within five miles of the plant site be evacuated. Members of the NRC technical staff are at the site and efforts to reduce the temperatures of the reactor fuel are continuing. These temperatures have been coming down slowly and the final depressurization of the reactor vessel has been delayed. There is evidence of severe damage to the nuclear fuel. Samples of primary coolant containing high-levels of radioiodine and instruments in the core indicate high fuel temperatures in some of the fuel bundles, and the presence of a large bubble of non-condensable gases in the top of the reactor vessel.

Because of these non-condensable gases, the possibility exists of interrupting coolant flow within the reactor when its pressure is further decreased and the contained gases expand. Several options to reach a final safe state for the fuel are under consideration. In the meantime, the reactor is being maintained in a stable condition.

Contact: SEBryan, IE x28188 ELJordan, IE x28188

Distribution: Transmitted H St 4.15

Chairman Hendrie
Commissioner Kennedy
Commissioner Gilinsky

Commissioner Bradford
Commissioner Ahearne

S. J. Chilk, SECY
C. C. Kammerer, CA
(For Distribution)

Transmitted: MNBB 4.33
L. V. Gossick, EDO
H. L. Ornstein, EDO
J. J. Fouchard, PA
N. M. Haller, MPA
R. G. Ryan, OSP
H. K. Shapar, ELD

P. Bldg 4.17
H. R. Denton, NRR
R. C. DeYoung, NRR
R. J. Mattson, NRR
V. Stello, NRR
R. S. Boyd, NRR
SS Bldg 4.35
W. J. Dircks, IMSS

J. G. Davis, IE
Region I 4.30
II 4.33
III 4.40
(MAIL IV 4.30)
J. J. Cummings, OIA
R. Minogue, SD

PRELIMINARY NOTIFICATION

IMMEDIATE

PRELIMINARY NOTIFICATION

March 30, 1979

PRELIMINARY NOTIFICATION OF EVENT OR UNUSUAL OCCURRENCE--PNO-79-67D

This preliminary notification constitutes EARLY notice of an event of POSSIBLE safety or public interest significance. The information presented is as initially received without verification or evaluation and is basically all that is known by IE staff on this date.

Facility: Three Mile Island Unit 2
Middletown, Pennsylvania (DN 50-320)

Subject: NUCLEAR INCIDENT AT THREE MILE ISLAND

Plant Status

Gaseous radioactivity from the primary coolant system letdown has been contained in waste gas decay tanks since the last gaseous release at approximately 2:50 p.m. March 30, 1979. At the present reactor coolant letdown rate of approximately 20 gpm it may be necessary to make a planned release of radioactive gas tomorrow to prevent gas decay tank relief valve operation at its setpoint of 100 psi. The licensee has installed a temporary line from the gas decay system back to reactor containment which is under evaluation before being placed in operation. Containment pressure is being maintained slightly negative (-1 psi) as a result of fan cooler operation.

Reactor coolant temperature measured at fifty-two locations at the outlet of the core have continued to come down slowly. Three outlet temperature instruments continue to indicate above saturation temperature.

The NRC staff was informed by the licensee on Friday morning that examination of containment pressure data for March 28 indicates a pressure spike up to approximately 30 psi occurred at approximately 1:50 p.m. NRC personnel are evaluating the possibility that a hydrogen explosion was the cause of the containment internal pressure spike.

The reactor coolant path is through one reactor coolant pump and one steam generator. The steam generator is being fed by an auxiliary feed-pump. Several options for depressurizing the reactor and continuing cooldown via the residual heat removal system are under consideration.

CONTINUED

The volume of non-condensable gases in the reactor vessel has been estimated to be approximately 1000 to 1500 cubic feet at 1000 psi. This volume is estimated to result in a water level of several feet over the top of the fuel. The rate of growth of the bubble in the reactor vessel is estimated to be less than 50 cubic feet per day at 1000 psi.

The Director of the Office of Nuclear Reactor Regulation, the Director of the Region I Office of Inspection and Enforcement and the Director of the Division of Operating Reactors arrived at the site at approximately 2 p.m. today to direct NRC activities at the site and site vicinity. Representatives of HEW and EPA are providing coordination and assistance to the NRC at the Incident Response Center.

NRC personnel assembled at the TMI site and vicinity in addition to the upper management personnel consist of the following:

	RI	RII	RIII	Hq
Reactor Inspectors (IE)	8	5	4	
Health Physicists (IE)	12	12	10	
Health Physicists (SP)				4
Public Affairs	1	1		1
Reactor System Analysts (NRR)				13
Radition Waste Specialists (NRR)				4
Health Physicists (NRR)				6
Operating Licensing (NRR)				2
Total Staff			83	

CONTINUED

The following equipment has been assembled at or near the site for support of NRC operations:

Equipment	Location
1 NRC Instrument Van with 2 telephone lines	Observation Center
1 NRC Office Van	"
1 Office Trailer (Supplied by Licensee)	"
200 Hand-Held Portable Radios from US Forest Service	
Portable Health Physics Instrumentation	
3 Helicopters from DOE for survey and support	
2 Laboratory Vans DOE/Bettis	

A sophisticated communications pod from DOE/NEST will arrive tomorrow.

ENVIRONMENTAL STATUS:

At approximately 3 P.M. on March 30, 1979, NRC analysis of eight vegetation samples from the offsite areas showed no detectable activity. At 5.30 P.M. the Pennsylvania State Radiation Health Department reported that environmental water and air samples collected in the vicinity of the Three Mile Island Plant showed no detectable activity except for some Xenon-133 and Xenon-135. Milk sample analysis showed no activity levels above background.

Offsite ground level gamma surveys in the Middletown and Goldsboro areas between 3:00 and 6:00 P.M. on March 30, ranged from .01 to 1 milliroentgens per hour. An aerial survey was made by helicopter from 4:00 - 6:00 P.M. on March 30, the site was surveyed in concentric circles at approximately one mile intervals and at a height of 300 to 1,000 feet. The highest radiation readings were over the site and measured 8 to 10 milliroentgens per hour. In the plume the highest radiation readings were 6 to 8 milliroentgens per hour. The plume followed the river in a northwesterly direction and was not detectable beyond five to six miles from the site. Site ground level surveys conducted between 7:30 - 8:00 P.M. ranged from .01 to 1.8 milliroentgens per hour.

CONTINUED

At 4 P.M. March 30, upper level winds were from the southeast. Forecast indicates precipitation in the form of thunderstorms moving in after 12 midnight, March 30. At 5:00 P.M. winds onsite at Three Mile Island were reported at 2 to 3 miles per hour generally from east to west.

Contact: EMHoward, IE x28111; EJordan, IE x28111

Distribution: Transmitted H St 1:10 a 3/31

Chairman Hendrie
Commissioner Kennedy
Commissioner Gilinsky

Commissioner Bradford
Commissioner Ahearne

S. J. Chilk, SECY
C. C. Kammerer, CA
(For Distribution)

Transmitted: MNBB 1:17

L. V. Gossick, EDO
H. L. Ornstein, EDO
J. J. Fouchard, PA
N. M. Haller, MPA
R. G. Ryan, OSP
H. K. Shapar, ELD

P Bldg 1:25

H. R. Denton, NRR
R. C. DeYoung, NRR
R. J. Mattson, NRR
V. Stello, NRR
R. S. Boyd, NRR
(SS Bldg 1:33)
W. J. Dircks, NMSS

J. G. Davis, IE
Region _____

(MAIL)
J. J. Cummings, OIA
R. Minogue, SD

White House Situation Room 12:55 a.m. 3/31/79

EPA

FDA/BRH

DOE/EOC 2:00 a.m. 3/31

Attachment (1)
Radiation Survey Map

IMMEDIATE

PRELIMINARY NOTIFICATION

English	Arabic
1. beautiful girl	1. فتاة جميلة
2. beautiful girl	2. فتاة جميلة
3. I am beautiful girl	3. أنا فتاة جميلة
4. girl	4. فتاة
5. beautiful (adj. stopped - girl)	5. جميلة (فتاة)
6. beautiful, girl	6. جميلة، فتاة
7. I am beautiful, girl	7. أنا جميلة، فتاة
8. beautiful (girl)	8. جميلة (فتاة)
9. I am, girl	9. أنا، فتاة
10. beautiful (girl)	10. جميلة (فتاة)
11. beautiful	11. جميلة
12. I am beautiful	12. أنا جميلة
13. beautiful (girl)	13. جميلة (فتاة)
14. I am (girl)	14. أنا (فتاة)
15. beautiful (girl)	15. جميلة (فتاة)
16. beautiful (girl)	16. جميلة (فتاة)
17. beautiful (girl)	17. جميلة (فتاة)
18. beautiful (girl)	18. جميلة (فتاة)
19. beautiful (girl)	19. جميلة (فتاة)
20. beautiful (girl)	20. جميلة (فتاة)
21. beautiful (girl)	21. جميلة (فتاة)
22. beautiful (girl)	22. جميلة (فتاة)
23. beautiful (girl)	23. جميلة (فتاة)
24. beautiful (girl)	24. جميلة (فتاة)
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26. beautiful (girl)	26. جميلة (فتاة)
27. beautiful (girl)	27. جميلة (فتاة)
28. beautiful (girl)	28. جميلة (فتاة)
29. beautiful (girl)	29. جميلة (فتاة)
30. beautiful (girl)	30. جميلة (فتاة)
31. beautiful (girl)	31. جميلة (فتاة)
32. beautiful (girl)	32. جميلة (فتاة)
33. beautiful (girl)	33. جميلة (فتاة)
34. beautiful (girl)	34. جميلة (فتاة)
35. beautiful (girl)	35. جميلة (فتاة)
36. beautiful (girl)	36. جميلة (فتاة)
37. beautiful (girl)	37. جميلة (فتاة)
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70. beautiful (girl)	70. جميلة (فتاة)
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72. beautiful (girl)	72. جميلة (فتاة)
73. beautiful (girl)	73. جميلة (فتاة)
74. beautiful (girl)	74. جميلة (فتاة)
75. beautiful (girl)	75. جميلة (فتاة)
76. beautiful (girl)	76. جميلة (فتاة)
77. beautiful (girl)	77. جميلة (فتاة)
78. beautiful (girl)	78. جميلة (فتاة)
79. beautiful (girl)	79. جميلة (فتاة)
80. beautiful (girl)	80. جميلة (فتاة)
81. beautiful (girl)	81. جميلة (فتاة)
82. beautiful (girl)	82. جميلة (فتاة)
83. beautiful (girl)	83. جميلة (فتاة)
84. beautiful (girl)	84. جميلة (فتاة)
85. beautiful (girl)	85. جميلة (فتاة)
86. beautiful (girl)	86. جميلة (فتاة)
87. beautiful (girl)	87. جميلة (فتاة)
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89. beautiful (girl)	89. جميلة (فتاة)
90. beautiful (girl)	90. جميلة (فتاة)
91. beautiful (girl)	91. جميلة (فتاة)
92. beautiful (girl)	92. جميلة (فتاة)
93. beautiful (girl)	93. جميلة (فتاة)
94. beautiful (girl)	94. جميلة (فتاة)
95. beautiful (girl)	95. جميلة (فتاة)
96. beautiful (girl)	96. جميلة (فتاة)
97. beautiful (girl)	97. جميلة (فتاة)
98. beautiful (girl)	98. جميلة (فتاة)
99. beautiful (girl)	99. جميلة (فتاة)
100. beautiful (girl)	100. جميلة (فتاة)

NOTE
micro r/hc

Time: 1045-1145
(30 Mar 79)

ARM Data (Two helicopters)
WIND - CALM

$$1 \frac{mr}{r} (500 \text{ ft})$$

INDUSTRIAL & MILITARY FACILITIES
WITHIN A 5 MILE RADIUS

THREE MILE ISLAND NUCLEAR STATION UNIT 1



FIGURE 2-5A
(AM, 30 9-22-7)

IMMEDIATE
PRELIMINARY NOTIFICATION

March 31, 1979

PRELIMINARY NOTIFICATION OF EVENT OR UNUSUAL OCCURRENCE--PNO-79-67E

This immediate preliminary notification constitutes an update of event of safety and public interest significance. The information presented is as initially received without verification or evaluation and is basically all that is known by NRC staff at this time.

Facility: Three Mile Island Unit 2
Middletown, Pennsylvania (DN 50-320)

Subject: NUCLEAR INCIDENT AT THREE MILE ISLAND

Plant Status

Reactor cooling continues using the 1A main reactor coolant pump with steam generator A steaming to the main condenser. Changes to this cooling method are not planned for the near term. An operability status of equipment is being compiled for use as backup in the event of failure of existing operating equipment.

The hydrogen recombiner is in an operable status; however, shielding of its piping and components is not fully installed and is presently considered inadequate. Lead for shielding has been located and will be moved to the site on an expedited basis. Calculations of hydrogen in containment show that the present concentration is less than 4%, the staff's limit on allowed concentration to ensure an explosive mixture is not obtained. Attempts are being made to obtain a containment atmosphere sample.

The waste gas decay tank pressures were 80 psi at 10:15 p.m. on March 30 and had been relatively constant for about five hours. The tank is set to relieve pressure at 100 - 110 psi. The radiation field (60 R/hr at contact) prevents resetting relief points.

Reactor coolant temperatures measured by incore thermocouples at 52 locations presently show only one location above saturation temperature. Temperatures in the core as measured from outlet thermocouples are gradually decreasing. Other system parameters are remaining stable.

Environmental Status

Three ARMS flights of one-hour length were conducted beginning at 9:30 p.m. on March 30, and at midnight and 3:00 a.m. on March 31. At a

CONTINUED

distance of one mile from the plant, maximum readings ranged from 0.5 milliroentgens per hour (mr/hr) to 1.5 mr/hr. At the 18 mile point, readings of 0.1 to 0.2 mr/hr were obtained during the two earlier surveys and 0.5 mr/hr during the latest. Flights are being made at approximately three hour intervals.

Offsite ground level gamma surveys in the Middletown area and north, between 9:30 p.m. on March 30 and 1:00 a.m. on March 31, indicated levels from 0.2 to 0.5 mr/hr. These measurements were taken in the general direction of the plume measured in aerial surveys.

At 3:00 p.m. on March 29, (prior to the releases of March 30) the licensee pulled thermoluminescent dosimeters from 17 fixed positions located within a 15 mile radius of the site. The dosimeters had been in place for three months and had been exposed for about 32 hours after the incident. Only two dosimeters showed elevated exposures above normal levels. The highest reading observed was on Three Mile Island, 0.4 miles north of the reactor at the North Weather Station. At this location, the quarterly accumulated exposure was 81 mr, approximately 65 mr above the normal quarterly exposure rate. The other high exposure was observed at North Bridge, 0.7 miles NNE of the reactor at the entrance to the site. At this location, the total quarterly accumulated exposure was 37 mr or approximately 22 mr above the normal quarterly exposure rate.

During the evening milking hours on March 30, milk samples were collected by the Pennsylvania Department of Environmental Resources at the following locations:

Harrisburg (2 sites)
York
Middletown
Bainbridge
Etters

Analyses showed no detectable radioiodine. The cows had been fed on stored feed but had been outside for exercise.

The Pennsylvania Department of Environmental Resources also collected water samples at filtration plants at Columbia, PA (for the City of Lancaster) and Wrightsville on March 30 in the morning and early afternoon. Both sample points are downstream of Three Mile Island. No detectable activity was found.

CONTINUED

March 31, 1979
PNO-79-67E

Contact: DThompson, IE x28111 NCMoseley, IE x28111

Distribution: Transmitted H St 9:04
Chairman Hendrie Commissioner Bradford
Commissioner Kennedy Commissioner Ahearne
Commissioner Gilinsky

S. J. Chilk, SECY
C. C. Kammerer, CA
(For Distribution).

Transmitted: MNBB 9:08
L. V. Gossick, EDO
H. L. Ornstein, EDO
J. J. Fouchard, PA
N. M. Haller, MPA
R. G. Ryan, OSP
H. K. Shapar, ELD

P. Bldg 9:15
H. R. Denton, NRR
R. C. DeYoung, NRR
R. J. Mattson, NRR
V. Stello, NRR
R. S. Boyd, NRR
SS Bldg 9:20
W. J. Dircks, NMSS

J. G. Davis, IE
Region I 9:24

(MAIL)
J. J. Cummings, OIA
R. Minogue, SD

White House Situation Room _____
EPA 10:15
FDA/BRH
DOE/EOC 10:01

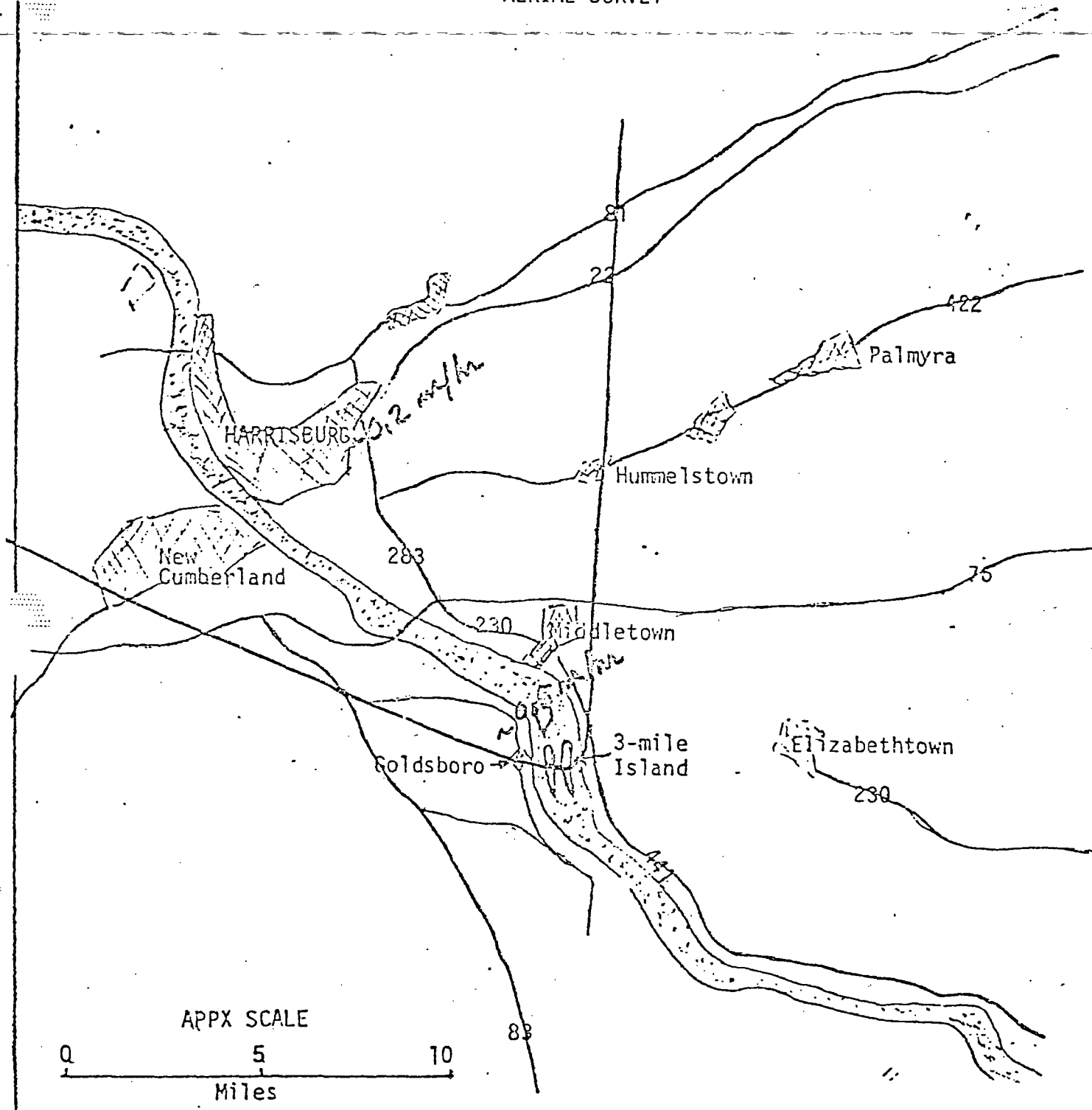
2II - 9:32
2III - 9:40
2IV - 9:48
2V - ~~10:00~~
 5:07

Attachment (1)
Radiation Survey Map

IMMEDIATE

PRELIMINARY NOTIFICATION

AERIAL SURVEY



March 29, 1979 10:45 a.m.

Plume in a N to NW direction. Primarily Xe-133.
Radiation measurements in the plume at about 10 miles
from plant in centerline of plume were 0.2 mr/hr; at
1 mile from plant, about 0.5 mr/hr maximum.

IMMEDIATE

PRELIMINARY NOTIFICATION

March 31, 1979

PRELIMINARY NOTIFICATION OF EVENT OR UNUSUAL OCCURRENCE--PNO-79-67F

This preliminary notification constitutes summary information of an event of safety or public interest significance. The information presented is a summary of information as of 5:30 pm date 3/31/79.

Facility: Three Mile Island Unit 2
Middletown, Pennsylvania (DN 50-320)

Subject: NUCLEAR INCIDENT AT THREE MILE ISLAND

Plant Status

There has been no change in the method of cooling the reactor since the previous report (PNO-79-67E). Reactor coolant temperatures measured by incore thermocouples at 52 locations have continued to decrease. At present none of the temperature readings is above saturation temperature for this pressure (554°F). System parameters remain stable. There has been a slight drop in pressurizer level from 215 to 191 inches.

Efforts continue to complete installation of components and piping on the hydrogen recombiner. Approximately 220 tons of lead shielding in various shapes and forms has arrived, or is on the way, to the site. Lead shielding is being installed around the recombiner. A decision to use the recombiner has not yet been made. Two samples of containment atmosphere have been analyzed which show hydrogen concentrations of 1.7 and 1.0%.

Efforts continue to estimate the volume of the noncondensable gas bubble above the core. Licensee calculations of the size of the bubble at 2:40 pm was 880 cubic feet at 875 psig. At about 4:20 pm this was recalculated by the licensee to be 621 cubic feet at 875 psig. This is being further evaluated.

Environmental Status

Three ARMS flights were conducted at about 6:00 a.m., 9:00 a.m., and 12:00 noon on March 31. All flights reflected a rather stable situation. Maximum readings in the plume were from 1.5 to 2.5 milliroentgens per hour (mr/hr) at a distance of one mile from the plant, from 0.5 to 1.0 mr/hr out to 7 miles, and 0.1 to 0.2 mr/hr beyond 10 miles. The plume width is about 1-1/2 to 2 miles. No radioiodines have been detected in the plume. Offsite ground level gamma surveys performed in the predominant wind direction indicated maximum levels of about 2 mr/hr at about 1/2 mile from the site in the direction of the plume. The wind was from the SSW at the time of the

CONTINUED

ARMS flights. At about 1 PM the winds shifted and are now blowing in a south easterly direction.

International Contacts

NRC's Office of International Programs (OIP) has prepared daily status reports, transmitted by Immediate Department of State telegrams to official NRC contacts in the 25 foreign countries with which NRC has regular official relations. OIP is also receiving many foreign telephone calls.

Two senior safety experts from the Federal Republic of Germany (FRG) arrived late March 30 and were briefed by NRC experts at the Operations Center, late March 30 and during March 31. Two French experts will arrive April 1. Washington Representatives or senior visitors of Japan, FRG, and Sweden also have been briefed in the Operations Center. OIP also has been briefing the President of the AECB of Canada, who offered to send any AECL or AECB experts who could be of assistance.

Contact with Licensee

NRC Regional Offices are transmitting to the utilities with operating licenses summary information (in the form of Preliminary Notifications) as they are prepared.

Contact: DThompson, IE x28111 EMHoward, IE x28111

Distribution: Transmitted H St 7:06p.

Chairman Hendrie
Commissioner Kennedy
Commissioner Gilinsky

Commissioner Bradford
Commissioner Ahearne

S. J. Chilk, SECY
C. C. Kammerer, CA
(For Distribution)

Transmitted: MNBB 7:10p

L. V. Gossick, EDO
H. L. Ornstein, EDO
J. J. Fouchard, PA
N. M. Haller, MPA
R. G. Ryan, OSP
H. K. Shapar, ELD

P. Bldg 7:15p
H. R. Denton, NRR
R. C. DeYoung, NRR
R. J. Mattson, NRR
V. Stello, NRR
R. S. Boyd, NRR
SS Bldg 7:20p
W. J. Dircks, NMSS

J. G. Davis, IE
Region I - 7:50
Region II - 7:55
Region III - 8:15
Region IV - 8:21
Region V - 7:45
(MAIL)
J. J. Cummings, OIA
R. Minogue, SD

White House Situation Room 7:25p

EPA -

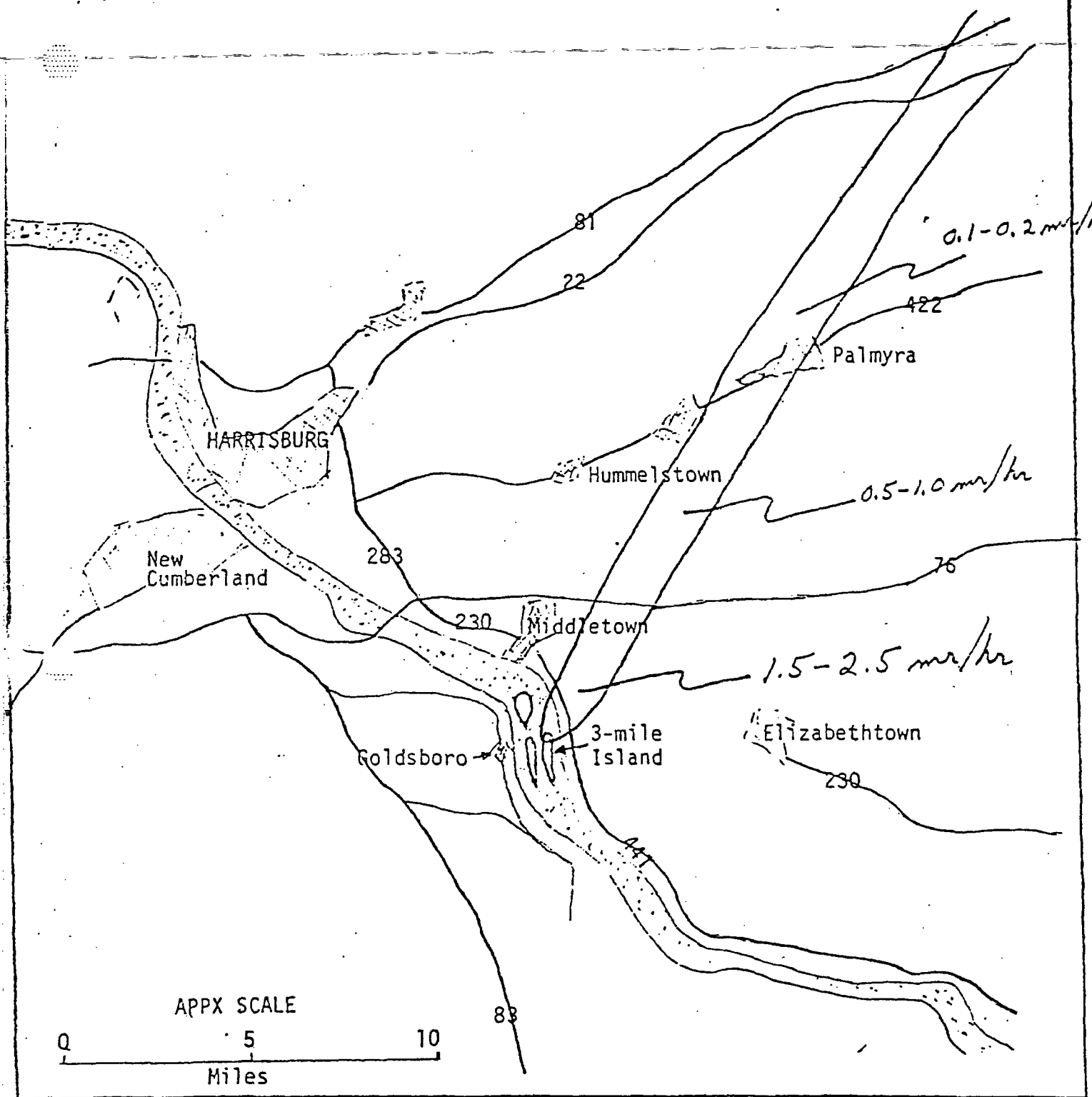
FDA/BRH -

DOE/EOC 7:05p.

Attachment (1)
Radiation Survey Map

IMMEDIATE

PRELIMINARY NOTIFICATION



March 31, 1979

AERIAL SURVEY plume direction and radiation readings shown above conducted at 6:00 & 9:00 AM and 12:00 noon.

IMMEDIATE

PRELIMINARY NOTIFICATION

April 1, 1979

PRELIMINARY NOTIFICATION OF EVENT OR UNUSUAL OCCURRENCE--PNO-79-67G

This preliminary notification constitutes summary information of an event of safety or public interest significance. The information presented is a summary of information as of 7:00 am on 4/1/79.

Facility: Three Mile Island Unit 2
Middletown, Pennsylvania (DN 50-320)

Subject: NUCLEAR INCIDENT AT THREE MILE ISLAND

Plant Status

There has been no substantial change in the primary system temperature and pressure. Incore thermocouples continue to show a downward trend.

Actions are underway to vent radioactive gases from the waste gas decay tank to the containment building. This will be performed through a temporary pipeline.

The licensee plans to hook up and shield two recombiners prior to initiating recombining operations to reduce the concentrations of hydrogen in the containment. The licensee estimates that it will require about 24 hours before the recombiners will be operational.

Calculated values by the licensee of the volume of noncondensable gases above the core continue to vary. The NRC staff has been unable to draw meaningful conclusions from this data.

Environmental Status

ARMS flights at approximately 3-hour intervals were continued on March 31 and the early hours of April 1. Survey results reflected stable conditions. Maximum readings were 2 mR/hr in the plume at a distance of 1 mile from the plant. The plume width has been about 1.5 miles out to a distance of 10 miles. At a distance of 10 miles, plume readings were 0.15 mR/hr. Milk was collected at nine stations on March 31; no radioactive iodine was detected. Offsite ground level gamma surveys performed in the predominant wind direction showed a maximum of 0.6 mR/hr at 500 yards from the plant to a low of 0.06 mR/hr at distances of 2 to 3 miles. An exception was noted during the collection of a sample from the waste gas decay tank when gamma levels of 3 mR/hr were observed at a distance of 500 yards east of the plant.

CONTINUED

Other Information

Analysis of a sample of primary coolant indicated that the principal isotopes released from the fuel were iodine, cesium and noble gases. A preliminary evaluation of the analytical results related to these more volatile isotopes indicates high fuel temperatures existed, perhaps for extended periods. However, ratios among isotopes indicate that the less volatile isotopes, such as strontium, were released to the coolant in quantities characteristic of releases from the gaps of the fuel and, therefore, based on this preliminary evaluation, melting of the fuel is not considered likely to have occurred.

Analysis of a containment building gas sample showed the following results:

<u>Isotope</u>	<u>Concentration (microcuries/milliliter)</u>
Xe-133	676
Xe-133m	16
Xe-135	8.1
I-131	6.3×10^{-2}
I-133	< 0.03

NRC representatives at the facility were informed at 10:45 p.m. on March 31 that there would be an attempt to sabotage the facility during the night. The FBI, Pennsylvania State Police and the licensee were notified.

Contact: DThompson, IE x28111 NCMoseley, IE x28111

Distribution: Transmitted H St 0828
Chairman Hendrie Commissioner Bradford
Commissioner Kennedy Commissioner Ahearne
Commissioner Gilinsky (For Distribution)

Transmitted: MNBB <u>0833</u>	P. Bldg <u>0826</u>	J. G. Davis, IE
L. V. Gossick, EDO	H. R. Denton, NRR	Region I <u>SITE</u> 11:38
H. L. Ornstein, EDO	R. C. DeYoung, NRR	Region II <u>5:50P. AND GRIER</u>
J. J. Fouchar, PA	R. J. Mattson, NRR	Region III <u>6:50P.</u>
N. M. Haller, MPA	V. Stello, NRR	Region IV <u>5:30P.</u>
R. G. Ryan, OSP	R. S. Boyd, NRR	Region V <u>6:20P.</u>
H. K. Shapar, ELD	SS Bldg <u>0845</u>	(MAIL)
	W. J. Dircks, NMSS	J. J. Cummings, OIA
		R. Minogue, SD

White House Situation Room _____
EPA _____
FDA/BRH _____
DOE/EOC 0840

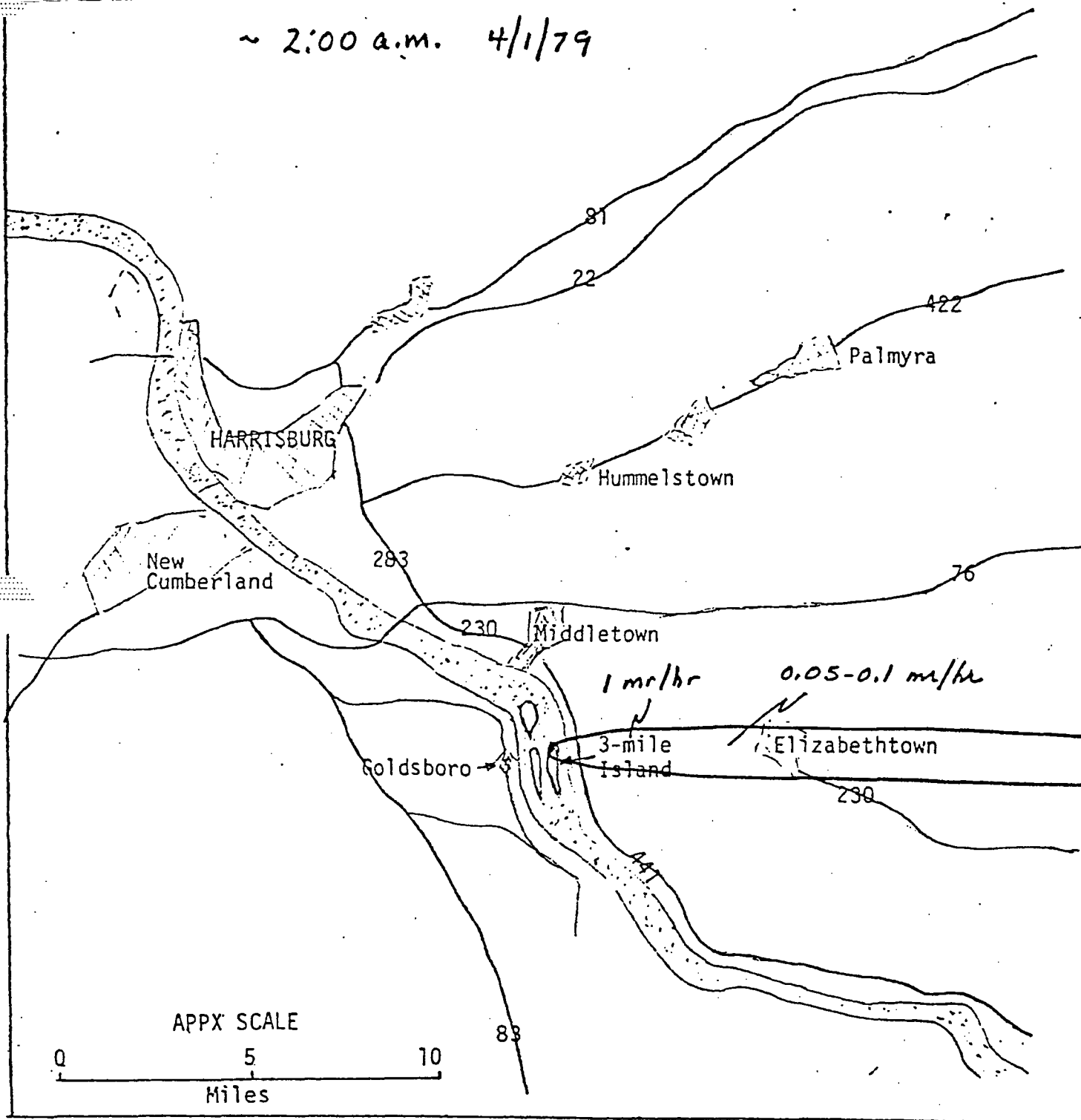
Attachment (1)
Radiation Survey Map

IMMEDIATE

PRELIMINARY NOTIFICATION

AERIAL SURVEY

~ 2:00 a.m. 4/1/79



IMMEDIATE

PRELIMINARY NOTIFICATION

April 2, 1979

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PRELIMINARY NOTIFICATION OF EVENT OR UNUSUAL OCCURRENCE--PNO-79-67H

This preliminary notification constitutes summary information of an event of safety or public interest significance. The information presented is a summary of information as of 12 noon on 4/2/79.

Facility: Three Mile Island Unit 2
Middletown, Pennsylvania (DN 50-320)

Subject: NUCLEAR INCIDENT AT THREE MILE ISLAND

Plant Status

Reactor pressure is being held at about 1000 psi. Incore thermocouples continue to show a decrease in fuel channel temperatures, with all measurements below about 475 degrees F. Bulk core inlet and outlet temperatures are 280 degrees F. At 11 p.m., April 1, a containment air sample indicated 2.3% hydrogen.

Further analyses and consultations with experts has led to the development of a strong consensus that the net oxygen generation rate inside the noncondensable bubble in the reactor is much less than originally conservatively estimated. Also, measurements at the plant appear to indicate that the volume of gases within the bubble is being significantly reduced. Further developments are being closely followed to confirm these favorable indications.

Action on Other Facilities

The Three Mile Island Unit 2 (TMI-2) pressurized water reactor was supplied by Babcock & Wilcox (B&W). All utilities with an operating B&W reactor were sent an NRC Bulletin yesterday to provide them with information about the TMI-2 incident; require a prompt review of their plant conditions, and to effect action to prevent such an incident. NRC inspectors are being sent to each licensed B&W reactor to provide increased inspection coverage. Additional reactor shutdowns or power reductions are not being required by the NRC at this time.

Environmental Status

Thirty-seven thermoluminescent dosimetry (TLD) stations were established by the NRC at distances from about one mile to about 12 miles from the plant. Multiple dosimeters are placed at each location - one will be

CONTINUED

left in place for a cumulative dose measurement; another is pulled and replaced each day. TLD's collected on April 1, 1979 indicated the following dose rates in populated areas:

<u>Location</u>	<u>Dose Rate (Milliroentgens per Hour)</u>
Middletown	0.044
Goldsboro	0.13
Goldsboro	0.040
Lewisberry	0.053
Pleasant Grove	0.041
York Haven	0.074
Conewago Falls	0.044
Emigsville	0.053

The highest dosimeter reading was recorded at a location $\frac{1}{2}$ mile ENE of the plant. The average dose rate at this location was 1.1 milliroentgen per hour.

For comparison purposes, the licensee's environmental report for 1977 when one unit was operating, indicated that the average dose rate at offsite stations located within three miles of the plant was 0.007 mR/hr.

Calculations using the TLD data indicate a population dose of approximately 200 man-rems for the 24-hour period. This means there was an average radiation dose of about 0.3 millirems per person in the population within a 20-mile radius of the plant.

ARM's flights were continued at three-hour intervals on April 1, and 2, 1979. The plume readings were essentially the same for all the flights. Direction of the plume varied from SW to WNW. The maximum level at one mile from the plant was about 3 mR/hr at an altitude of 500 feet. At three miles, the levels were from 0.1 to 0.5 mR/hr.

Offsite ground level surveys taken between 11:00 a.m. April 1, and 4:30 a.m. April 2, on both sides of the river in a southerly direction generally showed levels of 0.01 to 0.04 mR/hr.

Nine milk samples collected and analyzed by the State of Pennsylvania on April 1 showed no detectable radioiodine.

The licensee reported results from 5 milk samples taken from four locations around the plant collected the evening of March 30, 1979. The samples included one sample of goat's milk and four samples of cow's milk. The highest level was reported for the goat's milk and was 41 picocuries per liter (pCi/l.). The highest level in cow's milk was 8.4 pCi/l. The NRC has estimated the thyroid dose to a child drinking milk with concentrations of radioiodine at 41 pCi/l to be about 0.2 millirem per day. The thyroid dose to an adult would be about 0.07 millirem per day. Each of these samples indicated levels slightly above normal background levels for radioiodine.

CONTINUED

The Bureau of Radiological Health, HEW, also reported identifying radioiodine in six samples of milk collected on March 31, 1979 from four locations around the plant. Analyses of the samples identified near background levels of radioiodine. The levels ranged from the minimum detectable limit to about 40 pCi/l.

For comparison, the licensee's environmental report for 1977 showed observations of 0.74 to 31 pCi/l of I-131 in milk throughout the year previous to the incident. At 12,000 pCi/l, the U.S. Department of Health, Education, and Welfare recommends placing dairy herds on stored feed. Local herds are already on stored feed.

Contact: DThompson, IE x28487 NCMoseley, IE x28160

Distribution: Transmitted H St 3:50 p.m.
Chairman Hendrie Commissioner Bradford
Commissioner Kennedy Commissioner Ahearne
Commissioner Gilinsky

S. J. Chilk, SECY
C. C. Kammerer, CA
(For Distribution)

Transmitted: MNBB 4:00 p.m. P. Bldg 4:05 p.m.
L. V. Gossick, EDO H. R. Denton, NRR
H. L. Ornstein, EDO R. C. DeYoung, NRR
J. J. Fouchard, PA R. J. Mattson, NRR
N. M. Haller, MPA V. Stello, NRR
R. G. Ryan, OSP R. S. Boyd, NRR
H. K. Shapar, ELD SS Bldg 4:08
W. J. Dircks, NMSS

J. G. Davis, IE
Region I 4:11
Region II 4:25
Region III 4:35
Region IV 4:45
Region V 4:45
(MAIL) 5:00
J. J. Cummings, OIA
R. Minogue, SD

Site - 4:30

White House Situation Room _____
(Handcarry _____)
EPA _____
FDA/BRH _____
DOE/EOC 5:05
FAA _____
FDAA 4:45

Attachment 1:
Radiation Dose Rate Map

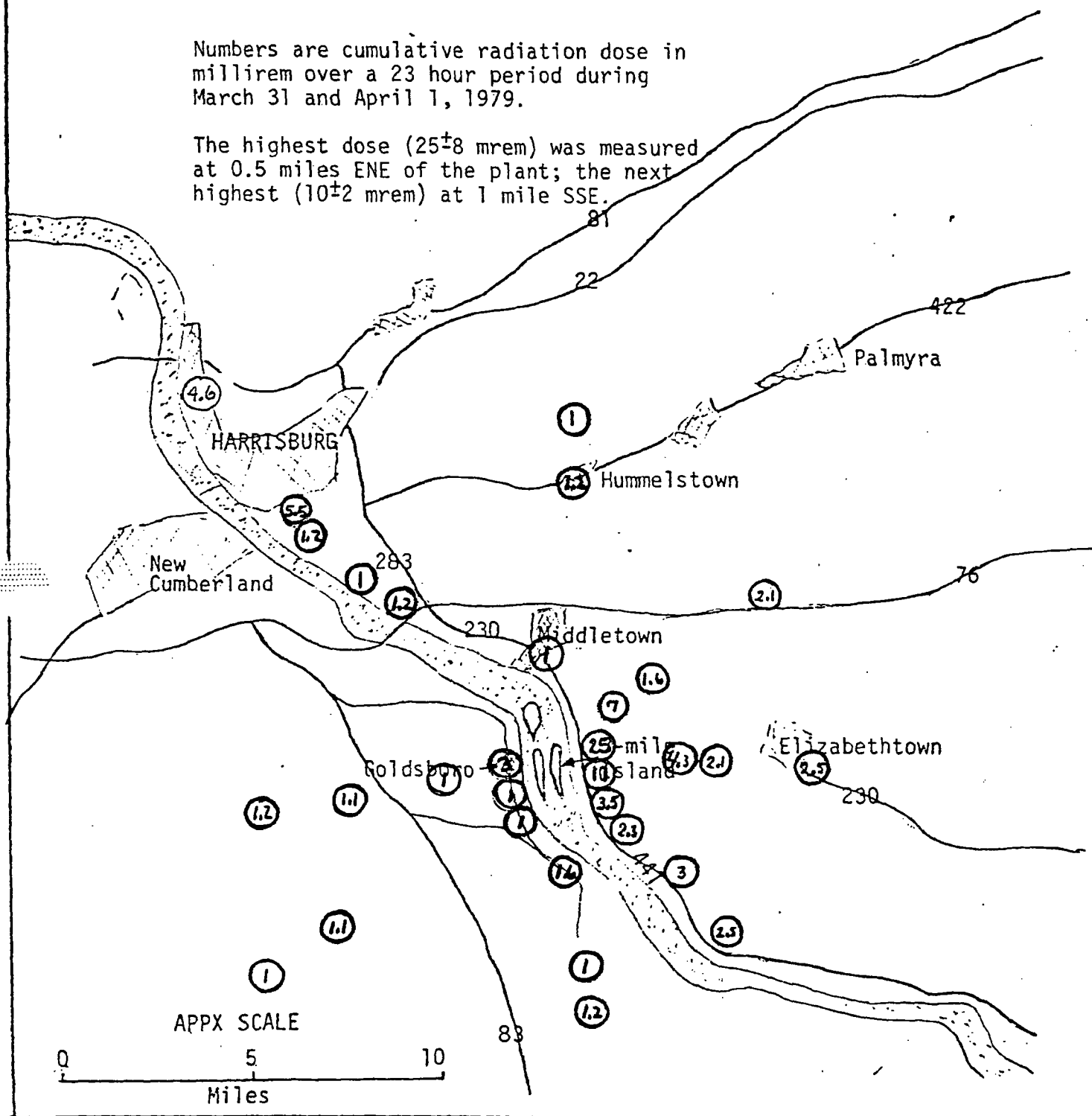
IMMEDIATE

PRELIMINARY NOTIFICATION

~~NRC THERMOLUMINESCENT DOSIMETER (TLD) DATA~~

Numbers are cumulative radiation dose in millirem over a 23 hour period during March 31 and April 1, 1979.

The highest dose (25 ± 8 mrem) was measured at 0.5 miles ENE of the plant; the next highest (10 ± 2 mrem) at 1 mile SSE.



IMMEDIATE

PRELIMINARY NOTIFICATION

April 3, 1979

PRELIMINARY NOTIFICATION OF EVENT OR UNUSUAL OCCURRENCE--PNO-79-67I

This preliminary notification constitutes summary information of an event of safety or public interest significance. The information presented is a summary of information as of 7:00 a.m. on 4/3/79.

Facility: Three Mile Island Unit 2
Middletown, Pennsylvania (DN 50-320)

Subject: NUCLEAR INCIDENT AT THREE MILE ISLAND

Plant Status

Reactor pressure remains near 1000 psi, with bulk core coolant inlet and outlet temperatures at 280°F. Core thermocouple readings are relatively unchanged and indicate a maximum temperature of 477°F which is well below saturation temperature for this pressure. (Only 3 thermocouples read above 400°F). The gas bubble still appears to be present at a much reduced volume, with bubble size calculations still being evaluated. Degasification continues. Containment atmosphere measurements indicate about 1.9 percent hydrogen. One hydrogen recombiner is operating, and a 12 day time period is projected for reduction of the hydrogen concentration to about 1%.

Plans to use a robot device to obtain a primary coolant sample are being evaluated. Preoperational testing with the robot is in progress.

Environmental Status

No surveillance flights have been conducted since 6:00 AM on April 2 because of weather. All offsite ground surveys indicate about 0.02 millirem/hour, except for a brief period during periodic venting of the Primary System Makeup Tank to the vent header. During this venting, an offsite team detected a brief, downwind 1.5 millirentgen/hour ground level dose rate with a rapid return to 0.02 millirentgen/hour. This level is less than others reported previously for similar operational activities.

Dose rates in populated areas as measured by NRC thermoluminescent dosimeters (TLD) showed a decrease from the previous day. Following are the data for the first two days.

CONTINUED

Dose Rate (Milliroentgens per Hour)

	<u>4/1/79</u>	<u>4/2/79</u>
Falmouth	No Sample	0.01
Middletown	0.044	0.01
Goldsboro	0.13	0.05
Goldsboro	0.040	0.02
Lewisberry	0.053	0.02
Pleasant Grove	0.041	0.02
York Haven	0.074	0.02
Conewago Heights	0.044	0.02
Emigeville	0.053	0.02

On April 2, the Food and Drug Administration reported concentrations of radioiodine in eight milk samples. The results ranged from 10 picocuries per liter (the minimum detectable activity) to 20 ± 10 picocuries per liter.

Since March 30, there have been controlled releases of several hundred thousand gallons of water from the industrial waste tank to the Susquehanna River. The effluents contain radioiodine. On April 2, the FDA reported that a sample of river water collected two miles from the plant was analyzed and found to contain 3.9×10^{-8} microcuries per milliliter of iodine-131, or about 13% of maximum permissible concentration (MPC).

Other Information

Exposure data collected at 1:00 am on April 3 indicated a level of <0.1 mR/hr in the Unit 2 control room compared to a level of 0.4 mR/hr measured early on April 2. On April 3, the auxiliary building access corridor showed 0.05 mR/hr and the personnel access hatch to the reactor building indicated 4 mR/hr.

Analysis of a second sample of containment building gas showed a decrease from concentrations determined as of March 31. Following are the data for the two analyses:

Concentration in Microcuries per Milliliter

<u>Isotope</u>	<u>3/31/79 at 7:00 am</u>	<u>4/2/79 at 10:30 am</u>
Xe 133	676	65
Xe 133m	16	0.27
Xe 135	8.1	0.62
I 131	0.063	0.0097
I 133	<0.03	<0.0061

CONTINUED

April 3, 1979
PNO-79-67I

Contact: DThompson, IE x28487 - NCMoseley, IE x28160

Distribution: Transmitted H St 5:20
Chairman Hendrie Commissioner Bradford
Commissioner Kennedy Commissioner Ahearne
Commissioner Gilinsky

S. J. Chilk, SECY
C. C. Kammerer, CA
(For Distribution)

Transmitted: MNBB 5:21
L. V. Gossick, EDO
H. L. Ornstein, EDO
J. J. Fouchard, PA
N. M. Haller, MPA
R. G. Ryan, OSP
H. K. Shapar, ELD

P. Bldg 5:25 530
H. R. Denton, NRR
R. C. DeYoung, NRR
R. J. Mattson, NRR
V. Stello, NRR
R. S. Boyd, NRR
SS Bldg 536
W. J. Dircks, NMSS

J. G. Davis, IE
Region I 5:35
Region II 5:35
Region III 5:35
Region IV 5:35
Region V 5:35
(MAIL)
J. J. Cummings, OIA
R. Minogue, SD

White House Situation Room _____
(Handcarry _____)

EPA 6:50
FDA/BRH 6:50
DOE/EOC 640
FAA _____
FDAA 710

DCDA 733
B&D 820

IMMEDIATE

PRELIMINARY NOTIFICATION

IMMEDIATE

PRELIMINARY NOTIFICATION

April 4, 1979

PRELIMINARY NOTIFICATION OF EVENT OR UNUSUAL OCCURRENCE--PNO-79-67J

This preliminary notification constitutes summary information of an event of safety or public interest significance. The information presented is a summary of information as of 7:00 am on 4/4/79.

Facility: Three Mile Island Unit 2
Middletown, Pennsylvania (DN 50-320)

Subject: NUCLEAR INCIDENT AT THREE MILE ISLAND

Plant Status

The cooling path to remove core decay heat continues to be through "A" steam generator to the main condenser.

Reactor pressure remains near 1000 psi, with bulk core coolant inlet and outlet temperatures at 280 degrees F. Core thermocouple readings are relatively unchanged and indicate a maximum temperature of 466 degrees F which is well below saturation temperature for this pressure. (Only three thermocouples read above 400 degrees F.) Gas is still indicated to be present based on bubble size calculations, but its volume is erratic indicating the effects of solubility and bubble dispersion. Vent valve on pressurizer has been closed and degasification continues through the letdown system.

Containment atmosphere measurements indicate about 2.1% hydrogen. One hydrogen recombiner is operating and an 11-day time period is projected for reduction of the hydrogen concentration to about 1%. At 1430 on April 3, one of three pressurizer level transmitters failed. Alternate methods of level measurements are being developed and procedures reviewed for implementation while calibration can occur with the existing detectors.

Plans to use a robot device to obtain a primary coolant sample are being evaluated. Preop testing with the robot is in progress.

The containment building, April 3, 1979, gas sample results reported on page 2 of PNO-79-67I have been determined to be incorrect and should be disregarded.

CONTINUED

Environmental Status

FDA has reanalyzed the river water sample collected the afternoon of April 2, 1979 at a location 2 miles downstream. The value of 39 picocuries per liter iodine-131 previously reported for this sample (PN-79-67I) has been found to be incorrect; no iodine above minimum detectable levels has been found.

ARMS flights were conducted at 9:00 am and 12:00 noon on April 3, 1979. The maximum radiation levels were detected during the 12:00 noon flight during which a maximum level of 2.0 mR/hr was measured at 1 mile from the plant; the level at 3 miles was 1.2 mR/hr. At a distance of 1 mile the plume was 1 mile wide with centerline about 290°.

Two other flights were conducted at 12:30 a.m. and 3:00 a.m. on April 4. The earlier flight measured radiation levels of 0.3 mR/hr at 1 mile and 0.1 to 0.2 mR/hr at 3 miles at altitudes of 600-700 feet. The plume was 0.3 mile wide at one mile centered at about 210°. Past 3 miles the plume was undefined and radiation levels were about 0.05 mR/hr. The later flight measured radiation levels of 1.1 mR/hr at 1 mile, 0.5 mR/hr at 3 miles and 0.3 mR/hr at 6 miles, at an altitude of about 500 feet. The plume was 0.6 mile wide at a distance of 1 mile from the plant, centered at 235°.

Offsite ground surveys indicated about 0.5 mR/hr for a brief period on the east side of the site. Radiation levels generally ranged from 0.01 to 0.02 mR/hr around the site.

An air sample for iodine-131 was collected in the plume at a location about 0.8 mile SSE of the plant. The iodine concentration in air was less than 1×10^{-10} microcuries per cubic centimeter.

Dose rates in populated areas as measured by NRC thermoluminescent dosimeters (TLDs) showed a slight increase from the previous day. The highest exposure rate was 0.41 mR/hr at a location 1 mile SSE of the plant. Following are the exposure rates for previously reported locations:

Dose Rate (Milliroentgens per Hour)

	<u>4/1/79</u>	<u>4/2/79</u>	<u>4/3/79</u>
Falmouth	0.15	0.01	.20
Middletown	0.044	0.01	.02
Goldsboro	0.13	0.05	.07
Goldsboro	0.040	0.02	.05
Lewisberry	0.053	0.02	.04
Pleasant Grove	0.041	0.02	.06
York Haven	0.074	0.02	.10
Conewago Heights	0.044	0.02	.07
Emigsville	0.053	0.02	.07

CONTINUED

Summary of Environmental Monitoring

Data concerning iodine released to the environment has been gathered and evaluated by the NRC, other Federal agencies, the State of Pennsylvania, and by the licensee. Several of the monitoring programs have been ongoing almost since the outset of the incident which began early on 3/28/79.

This information is based on data available to NRC as of 0630, April 3, 1979.

Water

A total of 130 offsite water samples were analyzed by NRC, DOE, and the Commonwealth of Pennsylvania. None of the 130 have shown any detectable radioiodine.

Based on calculations of the radioiodine released from the station to the river, it is estimated that the thyroid dose to any individual drinking the water is less than 0.2 mrem.

Air

152 offsite air samples were taken during the period 3/28-4/2 and analyzed by NRC, DOE, the Commonwealth of Pennsylvania, and by the licensee at distances up to 40 miles from Three Mile Island. The radioactivity in air which has been measured is principally noble gases--xenon isotopes. Eight of the 152 samples have indicated concentrations of radioiodine ranging from 2.7×10^{-13} - 2.4×10^{-11} microcuries/cc. No radioiodine was detected in the other samples. The maximum activity detected is about one-fourth of the permissible concentration established in the NRC "Standards for Protection Against Radiation," in Title 10, Code of Federal Regulations, Part 20 (10 CFR 20).

Based on calculations of the radioiodines released from the station to the atmosphere, it is estimated that the thyroid dose to an individual at the site boundary is less than 50 mrem over a 5-day period.

Milk

A total of 56 samples were collected from about 20 farms, located up to 13 miles in all directions from Three Mile Island. Of these, 38 showed no detectable radioiodine and 18 were reported as "no data." These analyses were conducted by the Commonwealth of Pennsylvania.

FDA has conducted an analysis of 9 milk samples collected April 1, 1979 and reported "positive" results ranging from 14 to 40 picocuries

CONTINUED

of I-131 per liter of milk. A sample of goat's milk, collected on March 30, 1979, contained 41 picocuries per liter. By comparison, the U.S. Department of Health, Education and Welfare recommends placing dairy herds on stored feed when I-131 in milk reaches 12,000 pCi/liter. Local herds are on stored feed because this is not the pasture season.

Based on measurements of the maximum concentration of radioiodine in all milk samples, the thyroid dose to any individual drinking milk is less than 0.5 mrem/day.

Vegetation

One hundred seventy-one vegetation samples have been collected and analyzed by DOE, NRC, and the Commonwealth of Pennsylvania. None showed any detectable radioiodine. These samples were taken at various locations within 2 miles of the site.

Soil

One hundred forty-seven soil samples were collected and analyzed by NRC and DOE. None showed any detectable radioiodine.

Inventory of Iodine in Plant

The greatest quantity of iodine in the plant is contained in the core and the coolant. The following table shows the inventory as of 0001 on 4/3/79.

	<u>Core*</u>	<u>Coolant**</u>
I-131	49 x 10 ⁶ Ci	3.2 x 10 ⁶ Ci
I-133	2.1 x 10 ⁶ Ci	0.12 x 10 ⁶ Ci

*Based on computer projections of Penn State University

**Based on primary coolant analysis decayed to the above date and time

A small source of iodine is from the industrial waste treatment system (IWTS) which presently contains 272,000 gallons of water having an iodine content as follows:

I-131	0.234 Ci
I-133	0.00087 Ci
TOTAL	0.23487 Ci

As of 2400 on 4/2/79, there were approximately 240,000 gallons of liquid in the IWTS with approximately 280,000 gallons of available storage

CONTINUED

April 4, 1979
PNO-79-67J

space. Currently, the turbine building sump is filling at a rate of approximately 30 gpm; however, over the last 3-day period the liquid has accumulated in the system at an average rate of 143 gpm. At the later accumulation rate, the IWTS would overflow at approximately 11:00 am on April 4, 1979 unless other action is taken. Efforts are underway by the licensee to obtain state approval for discharge.

The maximum concentration of radioiodine in the IWTS was 1.5×10^{-3} $\mu\text{Ci/ml}$ at 1000, March 31, 1979. That value has steadily decreased since that time. As of 1600, April 2, 1979, radioiodine concentration in the IWTS was 4.2×10^{-5} $\mu\text{Ci/ml}$ which, when diluted in the plant discharge water, would be about 1/3 off the technical specification limit of 3×10^{-7} microcuries per milliliter at the plant discharge.

Other Information

The attached table of collective doses was prepared by a joint NRC/HEW/EPA study group.

Contact: DThompson, IE x28487 NCMoseley, IE x28160

Distribution: Transmitted H St 8:18 AM
Chairman Hendrie Commissioner Bradford
Commissioner Kennedy Commissioner Ahearne
Commissioner Gilinsky

S. J. Chilk, SECY
C. C. Kammerer, CA
(For Distribution)

Transmitted: MNBB 8:39
L. V. Gossick, EDO
H. L. Ornstein, EDO
J. J. Fouchard, PA
N. M. Haller, MPA
R. G. Ryan, OSP
H. K. Shapar, ELD

P. Bldg 9:00
H. R. Denton, NRR
R. C. DeYoung, NRR
R. J. Mattson, NRR
V. Stello, NRR
R. S. Boyd, NRR
SS Bldg 8:30
W. J. Dircks, NMSS

J. G. Davis, IE
Region I
Region II
Region III
Region IV
Region V
(MAIL) Q-45
J. J. Cummings, OIA
R. Minogue, SD

White House Situation Room 10:20

~~(Handcarry)~~
EPA 11:20 AM
FDA/BRH 12:10 PM
DOE/EOC 12:30 PM
FAA HANDCARRY
FDAA 12:10 PM
BRP 12:50 AM
DCPA 1:00 PM

IMMEDIATE

PRELIMINARY NOTIFICATION

COMPARISON OF COLLECTIVE DOSES TO POPULATION
WITHIN 50 MILES OF THREE MILE ISLAND
NUCLEAR GENERATING STATION

Source	Whole-Body Collective Dose (man-rem)	Average Dose to Individual (mrem/year)
Natural Background		
One year's exposure (FES) (1970 population)	233,000	125
(1980 population)	270,700	
Normal Operation (FES) (1970 population)		
One year's exposure (all sources)	31	0.017
Gaseous effluents	2.05	0.0011
30-year operation	930	0.017
Preliminary Estimate of Accident Dose		
Cumulative up to noon 4/2/79	1,800	0.83
1970 population	1,868,000	
1980 census projections	2,165,651	

Note: 1 mrem (millirem) = 0.001 rem

FES = Final Environmental Statement

IMMEDIATE

PRELIMINARY NOTIFICATION

April 5, 1979

PRELIMINARY NOTIFICATION OF EVENT OR UNUSUAL OCCURRENCE--PNO-79-67K

This preliminary notification constitutes summary information of an event of safety or public interest significance. The information presented is a summary of information as of 7:00 am on 4/5/79.

Facility: Three Mile Island Unit 2
Middletown, Pennsylvania (DN 50-320)

Subject: NUCLEAR INCIDENT AT THREE MILE ISLAND

Plant Status

Reactor pressure remains near 1000 psi with bulk core coolant inlet and outlet temperatures approximately 280 degrees F. Core thermocouple readings are relatively unchanged and indicate a maximum temperature of 462 degrees F which is well below saturation temperature for the present reactor pressure. Three thermocouple readings remain above 400 degrees F. The number of thermocouple readings that are being monitored has been reduced to 30.

Containment atmosphere measurements indicate about 2% hydrogen. One hydrogen recombiner is in operation, with another unit on standby.

A Heise pressure gauge has been installed to provide an alternate method of determining the pressurizer level by monitoring the steam space pressure and water space pressure in the pressurizer. Testing procedures are under review. The pressurizer is being vented to the containment for about 15 minutes every 6-8 hours.

Plans for use of the robot to obtain a primary system sample have been developed.

Environmental Status

Preliminary analysis by FDA of 16 milk and miscellaneous food products collected on April 3, 1979 showed no detectable iodine concentrations in 12 samples and iodine ranging from 12-18 pCi/l in 4 milk samples. The State of Maryland reported on April 4, 1979 the results of analysis of 12 milk samples collected from 3 to 20 miles from the site. All samples were reported as less than the minimum detectable activity (MDA). One process milk sample from Harrisburg also was reported by the State of Maryland as less than MDA. Three water samples, two at Conewago and one from Holtwood Dam, were reported as less than MDA by the State of Maryland.

CONTINUED

FDA collected 5 other milk samples on April 3, 1979, two of which showed iodine concentrations of 12 and 17 pCi/l. One showed no detectable iodine and there are no results for the other two samples. One of these samples showed a cesium concentration of 13 pCi/l; there are no cesium results for the other four. The State of Pennsylvania analysis of 15 milk samples collected on April 3, 1979 showed one with iodine at 19 pCi/l, 13 with no detectable iodine, and 1 with no result. Four showed cesium levels ranging from 10-26 pCi/l and there are no results for the other 11 samples. All of the samples collected by the State and FDA were split samples, i.e., shared to obtain independent results.

Continuous ground level radiation surveys performed on April 4, 1979 by the NRC survey teams on the east and west sides of the Susquehanna River from a distance of 4 miles north to 4 miles south of TMI showed radiation levels averaging less than 0.03 mR/hr on the east side of the river and 0.01 to 0.04 mR/hr on the west side of the river. Prevalent wind direction during the day was from the east.

Six ARMS surveys were performed on April 4, 1979 at: 0001, 0300, 0600, 0900, 1200 and 1522 hours. The flights identified the plume to be in the sections of 200° and 300°. The maximum radiation levels were detected during the 0600 flight during which levels of 1.2 mR/hr were detected using portable survey meters. The 1522 flight used normally installed ARMS instrumentation and measured radiation levels of about 0.1 mR/hr (about 5 times background) at 1 mile distance and about 0.06 mR/hr (about 3 times background) at 2 miles distance.

On April 4, a 40-minute air sample taken about 0100 near York Haven, and a 60-minute sample taken about 1300 in Goldsboro, both indicated less than 1×10^{-10} $\mu\text{Ci/ml}$ I-131 (maximum permissible concentration for unrestricted areas).

Dose rates in populated areas as measured by NRC thermoluminescent dosimeters (TLDs) showed only minor changes from the previous day. Minor fluctuations are expected at these low dose rates. Following are the exposure rates for previously reported locations:

Dose Rate (Milliroentgens per Hour)

	<u>4/1/79</u>	<u>4/2/79</u>	<u>4/3/79</u>	<u>4/4/79</u>
Falmouth	0.15	0.01	0.20	0.04
Middletown	0.04	0.01	0.02	0.01
Goldsboro	0.13	0.05	0.07	0.07
Goldsboro	0.04	0.02	0.05	0.02
Lewisberry	0.05	0.02	0.04	0.03
Pleasant Grove	0.04	0.02	0.06	0.01
York Haven	0.07	0.02	0.10	0.05
Conewago Heights	0.04	0.02	0.07	0.02
Emigsville	0.05	0.02	0.07	0.02

CONTINUED

Occupational Radiation Exposures

Three occupational radiation doses in excess of the regulatory limit of 3 rems per calendar quarter have been confirmed. All three exposures were licensee personnel and were approximately 4 rems (this includes the two exposures reported in PNO-79-67B).

To date on April 4, 1979, there have been 12 individuals with doses greater than 2 rems but less than 3 rems. Three doses are for the period January 1 to April 4, 1979, but it is believed the majority of exposure was received as a result of the incident. More specific occupational exposure data is expected to be available in the near future.

Industrial Waste Treatment System (IWTS)

As of 0500 on April 5, 1979, the IWTS sump was 74% filled with about 100,000 gallons of capacity still available. The State of Pennsylvania approved release of material from the IWTS that does not exceed permissible values. No releases have been made as of 0500.

Other Information

At about 5:00 pm on April 4, 1979, the licensee initiated the shipment of solidified low level waste which was collected from Unit 1 prior to the Unit 2 event of March 28, 1979. Additional shipments will be made twice daily. The waste is being sent to the Chem Nuclear facility in South Carolina.

The attached table of collective doses updated to April 3 was prepared by a joint NRC/HEW/EPA study group.

Contact: DThompson, IE x28487 NCMoseley, IE x28160

Distribution: Transmitted H St 8:40

Chairman Hendrie
Commissioner Kennedy
Commissioner Gilinsky

Commissioner Bradford
Commissioner Ahearne

S. J. Chilk, SECY
C. C. Kammerer, CA
(For Distribution)

Transmitted: MNBB 8:47

L. V. Gossick, EDO
H. L. Ornstein, EDO
J. J. Fouchard, PA
N. M. Haller, MPA
R. G. Ryan, OSP
H. K. Shapar, ELD

P. Bldg 8:52
H. R. Denton, NRR
R. C. DeYoung, NRR
R. J. Mattson, NRR
V. Stello, NRR
R. S. Boyd, NRR
SS Bldg 8:52
W. J. Dircks, NMSS
Saul Levin, RES

J. G. Davis, IE
Region I
Region II
Region III
Region IV
Region V
(MAIL) 9:05
J. J. Cummings, OIA
R. Minogue, SD

CONTINUED

Distribution:
IE (TMI) Site: 8:45 (Provide copy to STATE)
White House Situation Room 9:50
EPA 11:00
FDA/BRH 11:30
DOE/EOC 9:35
FDDA/FEMA 11:56
BRP (State of PA) 12:02
DCPA 12:10
HEW _____

Handcarry (FAA)

IMMEDIATE

PRELIMINARY NOTIFICATION

COMPARISON OF COLLECTIVE DOSES TO POPULATION
WITHIN 50 MILES OF THREE MILE ISLAND
NUCLEAR GENERATING STATION

Source	Whole-Body Collective Dose (man-rem)	Average Dose to Individual (mrem/year)
Natural Background		
One year's exposure (FES) (1970 population)	233,000	125
(1980 population)	270,700	
Normal Operation (FES) (1970 population)		
One year's exposure (all sources)	31	0.017
Gaseous effluents	2.05	0.0011
30-year operation	930	0.017
Preliminary Estimate of Accident Dose		
Cumulative up to noon 4/3/79	2000	1.0
1970 population	1,868,000	
1980 census projections	2,165,651	

Note: 1 mrem (millirem) = 0.001 rem
FES = Final Environmental Statement

IMMEDIATE
PRELIMINARY NOTIFICATION

April 6, 1979

PRELIMINARY NOTIFICATION OF EVENT OR UNUSUAL OCCURRENCE--PNO-79-67L

This preliminary notification constitutes summary information of an event of safety or public interest significance. The information presented in a summary of information as of 7:00 a.m. on 4/6/79.

Facility: Three Mile Island Unit 2
Middletown, Pennsylvania (DN 50-320)

Subject: NUCLEAR INCIDENT AT THREE MILE ISLAND

Plant Status

Reactor pressure is about 1075 psi with bulk core coolant inlet and outlet temperatures at about 285 degrees F. Core thermocouple readings are relatively unchanged and indicate a maximum temperature of 448 degrees F, well below saturation temperature for the present reactor pressure. Three thermocouple readings remain above 400 degrees F. Thirty thermocouples are being monitored.

Containment atmosphere measurements indicate less than 2% hydrogen. One hydrogen recombiner is in operation, with the second unit on standby.

A Heise pressure gauge, installed to provide an alternate method of monitoring pressurizer level, has been unsatisfactorily pressure tested. (Boron crystals indicate leakage from an elbow in the bypass line around the sample cooler.)

Plans to vent Make-Up Tank (MUT) and one of the Waste Gas Decay Tanks (WGDT) gases to containment have been approved by the NRC. Waste Gas Decay Tank "A" venting to the containment was started at approximately 0545 on April 6, 1979. Venting was terminated at 0630 following an approximately ten-fold increase in radiation levels detected by the auxiliary building exhaust monitor.

Environmental Status

Periodic ground level radiation surveys performed on April 5, 1979 by the NRC survey teams on the east and west sides of the Susquehanna River from a distance of 4 miles north to 4 miles south of TMI detected radiation levels averaging less than 0.01 mR/hr on the west side and from 0.01 to 0.15 mR/hr on the east side. Prevalent wind direction during the day was from the west-northwest.

ARMS surveys were performed on April 5, 1979 at 0600, 0950, 1430, 1515, 1649, and 2120 hours. The flights identified the plume in the sector 110° to 130°. The maximum radiation levels were detected during the 0950 flight during which levels of 0.3 mR/hr were measured at 1 mile. Between 3 and 10 miles, the measured levels were from 0.03 to 0.05 mR/hr.

The State of Pennsylvania reported data on milk, water, precipitation and grass samples. Analysis of ten milk samples collected on April 4 and 5 detected no radioiodine above the minimum detectable activity (MDA). Also, the results of analysis of water samples collected from five cities surrounding TMI from March 31, 1979 to April 4, 1979 detected no levels of iodine above the MDA, as did analysis of precipitation and grass samples for April 2 and 4.

Dose rates in populated areas as measured by NRC thermoluminescent dosimeters (TLDs) showed only minor changes from the previous day. Minor fluctuations are expected at these low dose rates. Ten additional TLD stations at area schools were established on April 5 (making a total of 47 stations). Following are the exposure rates for previously reported locations:

Dose Rate (Milliroentgens per Hour)

	<u>4/1/79</u>	<u>4/2/79</u>	<u>4/3/79</u>	<u>4/4/79</u>	<u>4/5/79</u>
Falmouth	0.15	0.01	0.20	0.04	0.02
Middletown	0.04	0.01	0.02	0.01	0.01
Goldsboro	0.13	0.05	0.07	0.07	0.05
Goldsboro	0.04	0.02	0.05	0.02	0.03
Lewisberry	0.05	0.02	0.04	0.03	0.02
Pleasant Grove	0.04	0.02	0.06	0.01	0.01
York Haven	0.07	0.02	0.10	0.05	0.01
Conewago Heights	0.04	0.02	0.07	0.02	0.01
Emigsville	0.05	0.02	0.07	0.02	0.02

Population Exposure Estimates

Representatives from NRC, EPA and HEW have made estimates of the radiation doses to the public around TMI based primarily on TLD data. The calculated population dose increment for 4/3/79 to 4/4/79 is 70 man-rems. The total cumulative, 50 mile radius population dose since 3/28/79 is estimated to be 2100 man-rems with an average dose to an individual of 1.1 millirems. The estimated maximum dose to an individual offsite (hypothetical, continuously present 0.5 mile NE of plant) is estimated to be less than 100 millirem.

April 6, 1979
PNO-79-67L

Industrial Waste Treatment System (IWTS)

Industrial waste discharge (other than sewage) began about 3 a.m., 4/6/79 at an average rate of 100 gpm with Iodine 131 radioactivity of 2.3×10^{-5} microcuries per milliliter into the 58,000 gpm cooling tower discharge to the river. The Unit 1 waste evaporator condensate storage tank is also being discharged. The licensee has calculated the release to the river to be about two-thirds the MPC for continuous discharge of Iodine 131 from both units. The discharge from the Unit 2 Industrial Waste Treatment System was stopped at approximately 0400 on 4/6/79 to collect and analyze a sample.

Other Information

IE Bulletin 79-05A was issued on April 5, 1979 and required additional actions by Babcock and Wilcox power reactor facilities with a operating license.

Contact:

<u>Distribution:</u>	Transmitted H St <u>12:00</u>	
Chairman Hendrie	Commissioner Bradford	S. J. Chilk, SECY
Commissioner Kennedy	Commissioner Ahearne	C. C. Kammerer, CA
Commissioner Gilinsky		(For Distribution)
Transmitted: MNBB <u>12:10p</u>	P. Bldg <u>12:44</u>	J. G. Davis, IE
L. V. Gossick, EDO	H. R. Denton, NRR	Region I <u>1:05</u>
H. L. Ornstein, EDO	R. C. DeYoung, NRR	Region II <u>10:10</u>
J. J. Fouchard, PA	R. J. Mattson, NRR	Region III <u>1:10</u>
N. M. Haller, MPA	V. Stello, NRR	Region IV <u>1:15</u>
R. G. Ryan, OSP	R. S. Boyd, NRR	Region V <u>1:20</u>
H. K. Shapar, ELD	SS Bldg <u>12:55</u>	(MAIL)
	W. J. Dircks, NMSS	J. J. Cummings, OIA
	S. Levine, RES	R. Minogue, SD

IE (TMI) Site 11:30p.m (Provide copy to STATE)
White House Situation Room 1:55
EPA 2:15
FDA/BRH 2:16
DOE/EOC 2:40
FDDA/FEMA 2:16
BRP (State of PA) 2:50
DCPA 3:00
HEW (Picked up)

Handcarry (FAA)

IMMEDIATE

PRELIMINARY NOTIFICATION

IMMEDIATE

PRELIMINARY NOTIFICATION

April 7, 1979

PRELIMINARY NOTIFICATION OF EVENT OR UNUSUAL OCCURRENCE--PNO-79-67M

This preliminary notification constitutes summary information of an event of safety or public interest significance. The information presented is a summary of information as of 7:00 a.m. on 4/7/79.

Facility: Three Mile Island Unit 2
Middletown, Pennsylvania (DN 50-320)

Subject: NUCLEAR INCIDENT AT THREE MILE ISLAND

Plant Status:

The reactor pressure is about 1075 psi with bulk core coolant inlet and outlet temperatures at about 285° F. At approximately 1:25 p.m. on April 6, reactor coolant pump 1A tripped and reactor coolant pump 2A was started within about two minutes. After the change in operating pumps, there was a shift in the core thermocouple readings. The three thermocouples that had readings above 400° F are presently reading between 285° F and 315° F. The central thermocouple (position 8H) reading changed from approximately 375° F to 455° F and is now reading 453° F, the only reading above 400° F. The average temperature of the 30 thermocouples being monitored is 304° F.

The venting of Waste Gas Decay Tanks (WGDT) "A" and "B" to the containment building was resumed at 9:15 a.m. on April 6, 1979 and stopped at about 3:00 a.m. on April 7 when the pressures of WGDT "A" and "B" were 32 and 30 psig, respectively. At the time the venting was secured, a small release occurred resulting in radiation readings somewhat lower than previously experienced during such operations. Following venting of the WGDT to containment, the hydrogen concentration in the containment was slightly greater than 2%.

The discharge to the river from the industrial waste storage tanks (IWST) was resumed at 6:15 a.m. on April 6, 1979 at an average rate of 100 gpm. The IWST level is now about 52%.

Environmental Status:

Off-site radiation levels as identified by NRC survey teams continue to range between 0.01 and 0.1 mr/hr. These routine survey results were obtained on the east and west sides of the Susquehanna River at distances of four miles north and south of TMI. Prevailing winds during April 6 were from 270° to 300° (SSE).

CONTINUED

ARMS surveys were performed at 0700 and 1810 on April 6, 1979. The surveys identified a plume in the 120°-140° sector during both flights. The maximum radiation level identified during the 0700 survey was 0.3 mr/hr one mile from the site at 900 feet elevation. The 1810 flight identified 0.05 mr/hr three miles from the site at 500 feet elevation.

The State of Pennsylvania reported an iodine 131 level of 12 picocuries per liter (pCi/l) for one milk sample collected on April 5, 1979. Pennsylvania's minimum detectable activity (MDA) for this type of measurement is 10 pCi/l. The State of Maryland reported iodine 131 levels less than MDA (10 pCi/l) for one sample collected on April 4, 1979 and a second collected on April 5, 1979.

Airborne concentrations for 34 EPA samples collected between April 4, 1979 and April 5 were reported as at or less than MDA (1.8×10^{-13} microcuries per milliliter).

No new data regarding vegetation and water samples have been reported.

Dose rates in populated areas as measured by NRC thermoluminescent dosimeters (TLDs) showed only minor changes from the previous day. Minor fluctuations are expected at these low dose rates. Ten additional TLD stations at area schools were established on April 5 (making a total of 47 stations). Following are the radiation dose rates for previously reported locations:

Dose Rate (Milliroentgens per Hour)

	<u>4/1/79</u>	<u>4/2/79</u>	<u>4/3/79</u>	<u>4/4/79</u>	<u>4/5/79</u>	<u>4/6/79</u>
Falmouth	0.15	0.01	0.20	0.04	0.02	0.02
Middletown	0.04	0.01	0.02	0.01	0.01	0.01
Goldsboro	0.13	0.05	0.07	0.07	0.05	0.03
Goldsboro - South	0.04	0.02	0.05	0.02	0.03	0.02
Lewisberry	0.05	0.02	0.04	0.03	0.02	0.02
Pleasant Grove	0.04	0.02	0.06	0.01	0.01	0.02
York Haven	0.07	0.02	0.10	0.05	0.01	0.02
Conewago Heights	0.04	0.02	0.07	0.02	0.01	0.02
Emigsville	0.05	0.02	0.07	0.02	0.02	0.02

Contact: DThompson, IE x28487 NCMoseley, IE x28160

CONTINUED

April 7, 1979
PNO-79-67M

Distribution: Transmitted H St 9:50

Chairman Hendrie
Commissioner Kennedy
Commissioner Gilinsky

Commissioner Bradford
Commissioner Ahearne

S. J. Chilk, SECY
C. C. Kammerer, CA
(For Distribution)

Transmitted: MNBB 9:55

L. V. Gossick, EDO
H. L. Ornstein, EDO
J. J. Fouchard, PA
N. M. Haller, MPA
R. G. Ryan, OSP
H. K. Shapar, ELD

P. Bldg 9:57

H. R. Denton, NRR
R. C. DeYoung, NRR
R. J. Mattson, NRR
V. Stello, NRR
R. S. Boyd, NRR
SS Bldg 9:59
W. J. Dircks, NMSS
Saul Levine, RES

J. G. Davis, IE
Region I 10:20
Region II 10:25 10:19
Region III 10:27 11:10
Region IV 10:13
Region V 10:23
(MAIL)
J. J. Cummings, OIA
R. Minogue, SD

Distribution:

IE (TMI) Site: 10:30 (Provide copy to STATE)

White House Situation Room 10:33

EPA 11:13

FDA/BRH 11:30

DOE/EOC 11:40

FDDA/FEMA 11:30

BRP (State of PA) 11:45

DCPA 12:10

HEW

Handcarry (FAA)

IMMEDIATE

PRELIMINARY NOTIFICATION

IMMEDIATE
PRELIMINARY NOTIFICATION

April 8, 1979

PRELIMINARY NOTIFICATION OF EVENT OR UNUSUAL OCCURRENCE--PNO-79-67N

This preliminary notification constitutes summary information of an event of safety or public interest significance. The information presented is a summary of information as of 7:00 a.m. on 4/8/79.

Facility: Three Mile Island Unit 2
Middletown, Pennsylvania (DN 50-320)

Subject: NUCLEAR INCIDENT AT THREE MILE ISLAND

Plant Status

Bulk coolant inlet and outlet temperatures are about 281 degrees F. The average core thermocouple temperature is about 299 degrees F, and the higher thermocouple reading (8H) is about 442 degrees F.

At approximately 1955 hours, April 7, the licensee began lowering reactor coolant system pressure in 50 psi increments at a maximum rate of 5 psi per minute. This will continue until pressure reaches 500 psi, providing a 100 psi safety margin above saturation for the current temperature of the highest reading thermocouple. This is a step toward cold shutdown and includes degasification to prevent bubble formation as pressure and temperatures decrease.

During the initial pressure decrease to 700 psi, the auxiliary building stack monitors showed an increase of a factor of 10 at 2213 hours, April 7. Later information indicates that about 1400 gallons of borated water were added to the makeup tank during the initial pressure reduction, causing some gas to leak from the vent header. The ARMS helicopter reported a slight increase in readings downwind (south) of the site. Pressure was held steady for a short period and the auxiliary stack monitors decreased to the original readings. During the following pressure cycles there have been no increases in the radiation readings.

Hydrogen concentration in containment is about 1.9%.

At 2130 hours PST, April 7, airlifting of backup charcoal filters for the auxiliary building stack was initiated from Pasco, WA, to Harrisburg, PA.

The Unit 2 miscellaneous waste tank is being pumped to a bleed holdup tank in preparation for pumping the auxiliary building sump dry. IWTs discharge was stopped late on April 7 when the level reached 32%.

CONTINUED

Environmental Status

Offsite radiation levels identified by NRC survey teams continue to range between 0.01-0.1 mR/hr. These routine survey results were obtained on the east and west sides of the Susquehanna River at distances of 4 miles north and south of the site. Prevailing winds during April 7 were generally from about 320°.

ARMS surveys were performed on April 7 at 0600-0630 hours and 1800-1845 hours. The surveys identified a narrow plume in the 140°-150° sector during both flights. A maximum radiation level of 0.04 mR/hr at 1-10 miles was identified during the 0600-0630 hours flight. The 1800-1845 hours flight identified a maximum reading of 0.05 mR/hr at 1 mile from the site.

The following milk sample results were reported by the licensee.

<u>Location</u>	<u>Iodine Concentration (picocuries/liter)*</u>					
	3/29	3/30	3/31	4/1	4/2	4/3
1.1 miles east-northeast	< 1		8.5	4.5	3	1
1.6 miles southeast	< 1	-	21	-	4	2
2.7 miles west-northwest	< 3	-	4	-	3	2
control 12 miles north-northeast	< 1	-	< 1	< 1	< 1	< 1

*HEW Action Level: 12,000 picocuries/liter

The following table lists the composite results for milk samples collected by various agencies between 3/28/79 - 4/4/79.

<u>Description</u>	<u>STATE</u>	<u>FDA</u>	<u>EPA</u>
Number of analyses performed	133	84	4
Number of positive results	7	53	2
Average value of positive results (pCi/l)	15	19	17
Range of positive results (pCi/l)	11-20	9-41	10-24
Average MDA (pCi/l)	20	11	10

The following iodine-131 concentrations in air and water were identified by the licensee:

CONTINUED

a. <u>Air Samples</u>		<u>Results (picocuries per cubic meter)**</u>		
<u>Location</u>		<u>3/28-3/29</u>	<u>3/29-3/31</u>	<u>3/31-4/3</u>
0.4 mile north		0.47	22.6	0.11
2.3 miles south-southeast		< 0.2	22.1	1.39
0.4 " east		< 0.02	20.3	0.27
15 " northwest		< 0.03	1.83	< 0.024
9 " southeast		< 0.04	0.27	0.16
2.6 " north		0.08	12.7	0.051
1.6 " west-southwest		< 0.30	23.9	0.07
13 " south		< 0.02	0.14	0.36

**10 CFR 20 MPC: 100 picocuries/cubic meter

b. <u>Water Samples</u>		<u>Collected on 4/3/79</u>
<u>Location</u>		<u>Results***</u>
Swatara Creek (2.3 miles north)		< 0.2 pCi/l
Brunner Island (4.1 miles south-southeast)		"
Columbia water treatment plant (15 miles southeast)		"
York Haven (3 miles southeast)		"
York (15 miles southeast)		"

***10 CFR 20 MPC: 100 picocuries/liter

New data regarding dose rates in populated areas have not been processed.

Contact:

<u>Distribution:</u>	Transmitted H St <u>7:50</u>	
Chairman Hendrie	Commissioner Bradford	S. J. Chilk, SECY
Commissioner Kennedy	Commissioner Ahearne	C. C. Kammerer, CA
Commissioner Gilinsky		(For Distribution)
<u>Transmitted:</u> MNBB <u>7:52</u>	P. Bldg <u>7:55</u>	J. G. Davis, IE
L. V. Gossick, EDO	H. R. Denton, NRR	Region I <u>8:02</u>
H. L. Ornstein, EDO	R. C. DeYoung, NRR	Region II <u>8:05</u>
J. J. Fouchard, PA	R. J. Mattson, NRR	Region III <u>8:08</u>
N. M. Haller, MPA	V. Stello, NRR	Region IV <u>8:10</u>
R. G. Ryan, OSP	R. S. Boyd, NRR	Region V <u>8:17</u>
H. K. Shapar, ELD	SS Bldg <u>7:58</u>	(MAIL)
	W. J. Dircks, NMSS	J. J. Cummings, OIA
	S. Levine, RES	R. Minogue, SD

CONTINUED

IE (TMI) Site 8:22 (Provide copy to STATE)
White House Situation Room 9:30
EPA 9:25
FDA/BRH 9:18
DOE/EOC 8:33
FDDA/FEMA 9:18
BRP (State of PA) 10:30
DCPA 10:45
HEW

Handcarry (FAA)

IMMEDIATE
PRELIMINARY NOTIFICATION

(CORRECTED COPY)
IMMEDIATE
PRELIMINARY NOTIFICATION

April 9, 1979

PRELIMINARY NOTIFICATION OF EVENT OR UNUSUAL OCCURRENCE--PNO-79-67P*

This preliminary notification constitutes summary information of an event of safety or public interest significance. The information presented is a summary of information as of 6:00 a.m. on 4/9/79.

Facility: Three Mile Island Unit 2
Middletown, Pennsylvania (DN 50-320)

Subject: NUCLEAR INCIDENT AT THREE MILE ISLAND

Plant Status

Bulk coolant inlet and outlet temperatures are about 280 degrees F. The average core thermocouple temperature is about 300 degrees F, and the highest thermocouple reading (8H) is about 425 degrees F.

At approximately 0430 hours, April 9, the reactor coolant system pressure reached the 400 psig endpoint established for the second degassing evolution. At lower pressures in the 400 to 1,000 psig range, noise monitoring indicated possible presence of some gas in Loop B of the reactor cooling system. Noise monitoring verified re-resolution of gas with time. The operating reactor coolant pump vibration increased to 8.5-9 mils but the level of vibration was still significantly below the limit (30 mils). Pressure variation for degassing is continuing. Following reduction to 400 psig, the licensee plans to increase pressure to the 900-1,000 psig range and a phased cooldown is under consideration as the next step.

The licensee requested and received permission to temporarily change the minimum pressurizer level to 150" from 200" to prevent high pressurizer levels on pressure decreases.

At approximately 1320 hours, April 8, the reactor coolant system began to heat up. This was due to a decrease in steam generator level. Steam Generator A level was increased to decrease the primary temperature.

Hydrogen concentration in containment is about 1.85%.

At approximately 1942 hours EST, the last airplane involved in the filter airlift left Pasco, WA, for Harrisburg, PA.

CONTINUED (CORRECTED COPY)

* (The letter "O" was not used, previous issuance was PNO-79-67N)

ENVIRONMENTAL STATUS

Offsite radiation levels identified by NRC survey teams continue to range between 0.01-0.1 mR/hr. The results were obtained from routine surveys performed on the east and west side of the Susquehanna River at distances of up to 4 miles north and south of the site.

The following ARMS surveys were conducted during April 8, 1979:

<u>TIME</u>	<u>MAXIMUM RADIATION LEVELS</u>	<u>LOCATION</u>	<u>DISTANCE FROM SITE</u>
00:00-00:30	1 mR/hr	sector 180° (south)	½ - 1 mile
06:00-06:20	0.3 mR/hr	sector 200° (west-southwest)	1 mile
09:00-09:50	0.03 mR/hr	sector 170° (south-southeast)	1 mile
18:05-18:30	0.05 mR/hr	sector 275° (west-northwest)	3 miles

Eight offsite air samples collected near the NRC trailer during April 1-8 indicated iodine-131 concentrations between 0.9 - 3.3 picocuries per cubic meter (pCi/m³). The maximum permissible concentration per 10 CFR 20 is 100 pCi/m³.

No new data were reported for milk, water, and vegetation samples.

Offsite dose rates as determined by NRC thermoluminescent dosimeters (TLDs) indicate that present radiation levels are in close agreement with expected natural background levels. Minor fluctuations among individual TLDs are expected due to the limitations of the TLD system. Forty-seven TLDs are presently positioned at various locations around the site.

Dose rates (47 locations) as measured by NRC thermoluminescent dosimeters have ranged from 0.01 to 0.02 milliroentgens per hour for the past 24-hour periods of April 7 and 8.

Contact: EJordan, IE x28180 NCMoseley, IE x28160

Distribution: Transmitted H St ^{9:55 AM}~~10:25 AM~~
Chairman Hendrie Commissioner Bradford
Commissioner Kennedy Commissioner Ahearne
Commissioner Gilinsky

S. J. Chilk, SECY
C. C. Kammerer, CA
(For Distribution)

Transmitted: MNBB 10:00AM P. Bldg 10:02AM
L. V. Gossick, EDO H. R. Denton, NRR
H. L. Ornstein, EDO R. C. DeYoung, NRR
J. J. Fouchard, PA R. J. Mattson, NRR
N. M. Haller, MPA V. Stello, NRR
R. G. Ryan, OSP R. S. Boyd, NRR
H. K. Shapar, ELD SS Bldg 10:04AM
W. J. Dircks, NMSS
S. Levine, RES

J. G. Davis, IE
Region I 10:10AM
Region II 10:12AM
Region III 10:14AM
Region IV 10:16AM
Region V 10:21AM
(MAIL)
J. J. Cummings, OIA
R. Minogue, SD

IE (TMI) Site 10:07AM (Provide copy to STATE)
White House Situation Room 10:35AM
EPA 11:08 AM
FDA/BRH 11:30AM
DOE/EOC 10:27AM
FDDA/FEMA 11:30AM
BRP (State of PA) 12:13AM
DCPA 12:15 AM
HEW Pickup
FEMA 1100
Handcarry (FAA)

IMMEDIATE

PRELIMINARY NOTIFICATION
CORRECTED COPY

IMMEDIATE
PRELIMINARY NOTIFICATION

April 10, 1979

PRELIMINARY NOTIFICATION OF EVENT OR UNUSUAL OCCURRENCE--PNO-79-67Q

This preliminary notification constitutes summary information of an event of safety or public interest significance. The information presented is a summary of information as of 6:00 a.m. on 4/10/79.

Facility: Three Mile Island Unit 2
Middletown, Pennsylvania (DN 50-320)

Subject: NUCLEAR INCIDENT AT THREE MILE ISLAND

PLANT STATUS

Bulk coolant inlet and outlet temperatures remain at about 280 degrees F. The average core thermocouple temperature is about 295 degrees F, and the highest thermocouple reading (8H) is about 400 degrees F.

A 24-hour period of additional degasification by reducing primary pressure to 400 psig in small decrements was completed on April 9. No significant change in reactor coolant pump vibration occurred during this period. Noise measurements did indicate some gas in the coolant at lower pressures, with return into solution over time. The licensee plans to repeat the degassing operation, cycling down to approximately 300 psig, and subsequently to hold reactor coolant system pressure at approximately 1000 psig. A phased cooldown is under consideration as the next step.

A primary coolant system sample is planned to be taken this morning.

Hydrogen concentration in containment is about 1.7%.

ENVIRONMENTAL STATUS

Offsite radiation levels identified by NRC survey teams range between .02 - .2 mR/hr. The higher level lasted only a short time and is believed to be associated with operation of the waste gas compressors. The results were obtained from routine surveys performed on the east and west side of the Susquehanna River at distances of up to 4 miles north and south of the site.

CONTINUED

April 10, 1979
PNO-79-67Q

The following ARMS surveys were conducted during April 9, 1979:

<u>TIME</u>	<u>MAXIMUM RADIATION LEVELS</u>	<u>LOCATION</u>	<u>DISTANCE FROM SITE</u>
12:38 - 13:08	2 mR/hr	sector 235 -270	1 mile
18:05 - 18:45	1 mR/hr	sector 120	1 mile

No new data were reported for milk, water, and vegetation samples.

Offsite dose rates as determined by NRC thermoluminescent dosimeters (TLDs) indicate that present radiation levels are in close agreement with expected natural background levels.

Dose rates (47 locations) as measured by NRC thermoluminescent dosimeters have ranged from 0.01 to 0.05 milliroentgens per hour for the past 24-hour period of April 9.

Contact: EJordan, IE x28180 NCMoseley, IE x28160

Distribution:	Transmitted H St <u>8:10</u>	
Chariman Hendrie	Commissioner Bradford	S. J. Chilk, SECY
Commissioner Kennedy	Commissioner Ahearne	C. C. Kammerer, CA (For Distribution)

Transmitted: MNBB <u>8:18</u>	P. Bldg <u>8:13</u>	J. G. Davis, IE
L. V. Gossick, EDO	H. R. Denton, NRR	Region I <u>8:25</u>
H. L. Ornstein, EDO	R. C. DeYoung, NRR	Region II <u>8:28</u>
J. J. Fouchard, PA	R. J. Mattson, NRR	Region III <u>8:31</u>
N. M. Haller, MPA	V. Stello, NRR	Region IV <u>8:37</u>
R. G. Ryan, OSP	R. S. Boyd, NRR	Region V <u>8:40</u>
H. K. Shapar, ELD	SS Bldg <u>8:21</u>	(Mail)
	W. J. Dircks, NMSS	J. J. Cummings, OIA
	S. Levine, RES	R. Minogue, SD

IE (TMI) Site 8:15 (Provide copy to STATE)
White House Situation Room 8:43
EPA 9:50
-FDA/BRH 10:30
DOE/EOC 10:15
-FDDA/FEMA 10:30
BRP (State of PA) 9:14
DCPA 9:55
HEW (Pickup)

Handcarry (FAA)

IMMEDIATE
PRELIMINARY NOTIFICATION

IMMEDIATE
PRELIMINARY NOTIFICATION

April 11, 1979

PRELIMINARY NOTIFICATION OF EVENT OR UNUSUAL OCCURRENCE--PNO-79-67R

This preliminary notification constitutes summary information of an event of safety or public interest significance. The information presented is a summary of information as of 7:00 a.m. on 4/11/79.

Facility: Three Mile Island Unit 2
Middletown, Pennsylvania (DN 50-320)

Subject: NUCLEAR INCIDENT AT THREE MILE ISLAND

Plant Status

Bulk coolant inlet and outlet temperatures remain at approximately 280 degrees F. The peak core thermocouples have declined to less than 400 degrees F for the first time, the highest thermocouple reading is 398 degrees F.

Degassing operations were continued; however, after cycling down to 425 psig, pressure had to be increased because the system letdown flow rate was not sufficient to prevent an increase in the pressurizer level caused by normal coolant pump seal water leakage into the reactor cooling system. Pressure was increased to 550 psig where some degassing occurred. Pressure was subsequently increased to approximately 940 psig, where it is being held while pressurizer level is being reduced. Continued degassing operations, with reactor pressure reduced to 300 psig, is being reexamined.

A primary coolant sample was taken at approximately 0730 on April 10, 1979. Portions of the sample will be analyzed by Bettis, B&W, Oak Ridge National Laboratory and Savannah River.

The hydrogen concentration in containment is about 1.8%. The containment temperature is about 93 degrees F; the containment fans are operating, however, the cooling water to the system was shut off at about 1600 hours on April 10, 1979 due to leakage from the shaft seal packing gland on one of the Reactor Building Emergency Cooling booster pumps in the Auxiliary Building. The containment temperature at the time the cooling water was shut off was 80 degrees F.

CONTINUED

IMMEDIATE
PRELIMINARY NOTIFICATION

Environmental Status

Offsite radiation levels identified by NRC survey teams range between 0.02 - 0.12 mR/hr. The radiation levels appeared to be lower than yesterday. The results were obtained from routine surveys performed on the east side of the Susquehanna River at distances of up to 2 1/2 miles north and south of the site. The primary coolant sampling resulted in no discernable effect on these radiation levels.

At the request of NRC, a whole-body counter was set up in Middletown on April 10, 1979, by the Commonwealth of Pennsylvania Department of Environmental Resources. Over 300 residents who live within a 3-mile radius of Three Mile Island have signed up to be scanned. As of 1600 hours on April 10, 1979, 24 people who live closest to the site and whose families have milk cows for their own use have been scanned. The scan results reported thus far do not indicate radiation levels above normal body levels. It is expected that counting will continue until at least Saturday, April 14, 1979.

The following ARMS surveys were conducted during April 10, 1979:

<u>Time</u>	<u>Maximum Radiation Levels</u>	<u>Location</u>	<u>Distance From Site</u>
0627-0800	0.1 mR/hr	sector 310°	1 mile
1833-1913	0.15 mR/hr	sector 340°	1 mile

The State of Pennsylvania reported that an air sample taken at the observation center from March 22 to April 2 indicated 2.4 picocuries per cubic meter of iodine-131. The NRC took a 24-hour air sample near the observation center starting at 1600 hours on April 9, 1979. The results indicated 4.2 picocuries per cubic meter of iodine-131. The 10 CFR 20 limit for iodine-131 is 100 picocuries per cubic meter.

A soil and vegetable sample taken by NRC in Goldsboro on April 10, 1979 indicated no detectable activity.

Thirty-five milk samples were collected by various Federal and State agencies on April 5-6, 1979. All were less than the minimum detectable activity of 10 picocuries per liter of iodine-131.

CONTINUED

IMMEDIATE
PRELIMINARY NOTIFICATION

DOE collected samples from 0800 hours on April 9 to 1600 hours on April 10, 1979, and analyzed for iodine-131. Results were as follows:

15 water samples	-	no detectable activity
12 vegetable samples	-	no detectable activity
4 soil samples	-	no detectable activity
1 air sample near Goldsboro	-	8.5 picocuries per cubic meter

Dose rates (47 locations) as measured by NRC thermoluminescent dosimeters have ranged from 0.01 to 0.03 milliroentgens per hour for the past 24-hour period of April 10, 1979. These levels are in close agreement with expected natural background levels.

Contact: RCPaulus, IE x 27246: DThompson, IE x28487

Distribution: Transmitted H St 7:27

Chairman Hendrie
Commissioner Kennedy
Commissioner Gilinsky

Commissioner Bradford
Commissioner Ahearne

S. J. Chilk, SECY
C. C. Kammerer, CA
(For Distribution)

Transmitted: MNBB 7:41
L. V. Gossick, EDO
H. L. Ornstein, EDO
J. J. Fouchard, PA
N. M. Haller, MPA
R. G. Ryan, OSP
H. K. Shapar, ELD

P. Bldg 7:33
H. R. Denton, NRR
R. C. DeYoung, NRR
R. J. Mattson, NRR
V. Stello, NRR
R. S. Boyd, NRR
SS Bldg 7:45
W. J. Dircks, NMSS
S. Levine, RES

J. G. Davis, IE
Region I 7:49
Region II 7:56
Region III 8:07
Region IV 8:19
Region V 8:38
(MAIL)
J. J. Cummings, OIA
R. Minogue, SD

IE (TMI) Site 7:36 (Provide copy to STATE)

White House Situation Room 11:10

EPA 10:40

FDA 12:30

DOE/EOC 10:20

PEMA 3:20

BRP (State of PA) 2:10

DCPA 3:30

HEW (Pickup)

~~FAA~~

Handcarry (FAA)

IMMEDIATE
PRELIMINARY NOTIFICATION

IMMEDIATE
PRELIMINARY NOTIFICATION

April 12, 1979

PRELIMINARY NOTIFICATION OF EVENT OR UNUSUAL OCCURRENCE -- PNO-79-675

This preliminary notification constitutes summary information of an event of safety or public interest significance. The information presented is a summary of information as of 7:00 a.m. on April 12, 1979.

Facility: Three Mile Island Unit 2
Middletown, Pennsylvania (DN 50-320)

Subject: NUCLEAR INCIDENT AT THREE MILE ISLAND

Plant Status

Bulk coolant inlet and outlet temperatures remain at approximately 280 degrees F. The peak core thermocouples remain less than 400 degrees F with the exception that one thermocouple read 401°F during reduced pressure operation.

The degassing operations were completed at about 0115 on April 12, 1979. The minimum reactor coolant system pressure was 303 psig. Noise analysis evaluations indicate considerable degassing took place during these operations. Pressure is being returned to about 1000 psig and will be held at that level.

A second pressurizer level measuring channel failed at 2045 on April 11, 1979. There is one original pressurizer level channel still operating. An approved procedure is available for monitoring pressurizer level by balancing makeup tank level. Calibration of the Heise pressure gauge (backup level indicator installed several days ago) is planned during the current increase in pressure; it is expected this will provide an additional method of monitoring pressurizer level.

Cooling water flow was restored to the coolers in the containment at 0730 on April 11, 1979, and the containment temperatures have decreased from about 93 degrees F to about 85 degrees F. The hydrogen concentration in containment is about 1.6%.

Preliminary results of the primary coolant samples analyzed at Oak Ridge and Savannah River have been received. Very little uranium was identified in either sample, supporting previous analyses which formed the basis to conclude insignificant fuel melting occurred.

Changeout of the Auxiliary Building filters has commenced. Filters on its condenser vacuum pumps are expected to be operational today.

CONTINUED

Environmental Status

Offsite radiation levels identified by NRC survey teams range between 0.02 and 0.1 mR/hr. The radiation levels continue to be low. The results were obtained from routine surveys performed on the east and west sides of the Susquehanna River at distances up to five miles north and south of the site.

By 7:00 a.m. on April 12, one hundred seventy-six local residents were scanned with the whole-body counter which was set up in Middletown. The scan results reported do not indicate radiation levels above normal body levels. Over 650 individuals have signed up to be scanned.

The following Aerial Measuring System surveys were conducted on April 11. These were previously reported as ARMS surveys. Winds were calm during these surveys.

<u>Time</u>	<u>Max. Radiation Level</u>	<u>Distance from Site</u>
0917-0452	0.025 mR/hr	1 mile
1700-1735	0.010 mR/hr	1 mile

The State of Pennsylvania reported that an air sample taken at the observation center from April 2 to April 10 indicated 1.4 picocuries per cubic meter of iodine-131. The NRC took a 24-hour air sample near the observation center starting at 1600 hours on April 10, 1979. The results indicated 1.6 picocuries per cubic meter of iodine-131. The 10 CFR 20 limit for iodine-131 is 100 picocuries per cubic meter.

Dose rates (47 locations) as measured by NRC thermoluminescent dosimeters have ranged from 0.01 to 0.02 milliroentgens per hour for the past 24-hour period of April 11, 1979. These levels are in close agreement with expected natural background levels.

At 0100 hours on April 12, 1979, two tanks previously used as temporary storage for Unit 2 condensate storage tank overflow left the site for New Jersey to undergo some repair work. The tanks had been flushed previously and sample results from one tank indicated levels of radioactivity of 1×10^{-6} uCi/ml gross beta activity. While the truck drivers had obtained property releases for the tanks they had not obtained radiation safety releases. Shortly after the trucks departed the site, the error was realized. At the request

CONTINUED
IMMEDIATE PRELIMINARY NOTIFICATION

April 12, 1979
PNO-79-67-S

of the Unit 2 Shift Supervisor, NRC personnel contacted the Pennsylvania State Police and the truck from which the high gross beta activity sample was obtained was intercepted about 5 miles outside of Harrisburg and escorted back to the site where it arrived at about 0300 hours. The returned tank was surveyed and no leakage or external radiation levels were detected. A sample of the tank's residual liquid contents was taken and is being analyzed. The licensee is making procedural revisions to prevent recurrence of the problem.

Corrections:

PNO-79-67N, dated April 8 - Item b on page 3 listed the MPC for iodine-131 as 100 picocuries per liter. It should have read 300 picocuries per liter.

PNO-79-67R, dated April 11 - On page 2, the ARMS results were listed as 0.15 mR/hr for the 1833 to 1913 survey. It should have read 0.015 mR/hr. Also the ARMS surveys were described as being in sector 310° for the 0627-0800 survey and in sector 340° for the 1833 - 1913 survey. It should have read 130° and 160°, respectively.

Contact: RCPaulus, IE x27246 DThompson, IE x28487

Distribution: Transmitted H St 9:48

Chairman Hendrie
Commissioner Kennedy
Commissioner Gilinsky

Commissioner Bradford
Commissioner Ahearne

S. J. Chilk, SECY
C. C. Kammerer, CA
(For Distribution)

Transmitted: MNBB 9:53

L. V. Gossick, EDO
H. L. Ornstein, EDO
J. J. Fouchard, PA
N. M. Haller, MPA
R. G. Ryan, OSP
H. K. Shapar, ELD

P. Bldg 9:44
H. R. Denton, NRR
R. C. DeYoung, NRR
R. J. Mattson, NRR
V. Stello, NRR
R. S. Boyd, NRR
SS Bldg 9:57
W. J. Dircks, NMSS
S. Levine, RES

J. G. Davis, IE
Region I 10:42
Region II 10:05
Region III 10:20
Region IV 10:32
Region V 10:54
(MAIL)
J. J. Cummings, OIA
R. Minogue, SD

IE (TMI) Site 10:25 (Provide copy to STATE)

White House Situation Room 10:17

FDA 9:47 (Provide copies to the Administrator and the Operations Center)

EPA ~~11:10~~ 11:10

DOE/EOC 10:38

PEMA 12:45

BRP (State of PA) 11:31

DCPA 1:50

HEW (Pickup)

Handcarry (FAA)

IMMEDIATE
PRELIMINARY NOTIFICATION

IMMEDIATE
PRELIMINARY NOTIFICATION

April 13, 1979

PRELIMINARY NOTIFICATION OF EVENT OR UNUSUAL OCCURRENCE -- PNO-79-67T

This preliminary notification constitutes summary information of an event of safety or public interest significance. The information presented is a summary of information as of 7:00 a.m. on April 13, 1979.

Facility: Three Mile Island Unit 2
Middletown, Pennsylvania (DN 50-320)

Subject: NUCLEAR INCIDENT AT THREE MILE ISLAND.

Plant Status

Bulk coolant inlet and outlet temperatures remain at approximately 280 degrees F. The peak core thermocouple readings have declined to below 385 degrees F. The primary system pressure is being maintained between 950 psig and 1000 psig.

There are presently two of the three original pressurizer level channels in operation (the pressurizer level indicator that was reported to have failed on April 11 started to function again at 1955 on April 12 and has been tracking reasonably well). Calibration of the Heise pressure gauge is in progress. A differential pressure sensor is being installed on the pressurizer instrument lines in an attempt to provide an additional method of monitoring pressurizer level.

The hydrogen recombiner tripped off at 0115 on April 13 (burned out heaters). The hydrogen concentration in the containment building was about 1.5% at 2200 on April 12. A decision has not been made whether to replace the heaters or to initiate operation of the backup recombiner.

Environmental Status

The maximum offsite radiation level identified by NRC survey teams was 0.02 mR/hr. The results were obtained from routine surveys performed on the east and west sides of the Susquehanna River at distances up to five miles north and south of the site.

By 4:15 p.m. on April 12, 214 local residents were scanned with the whole-body counter which was set up in Middletown. The scan results reported to not indicate radiation levels above normal body levels.

CONTINUED
IMMEDIATE PRELIMINARY NOTIFICATION

The following Aerial Measuring System surveys were conducted on April 12. Winds were calm during these surveys.

<u>Time</u>	<u>Max. Radiation Level</u>	<u>Distance from Site</u>
0938 - 1016	0.03 mR/hr	1 mile
1510 - 1603	0.01 mR/hr	1000 feet

The NRC took a 24-hour air sample near the observation center starting at 1600 hours on April 11, 1979. The results indicated less than 2.2 picocuries per cubic meter of iodine-131. The 10 CFR 20 limit for iodine-131 is 100 picocuries per cubic meter.

Dose rates (47 locations) as measured by NRC thermoluminescent dosimeters for the past 24-hour period of April 12, are in close agreement with expected natural background levels.

Samples of air, water, soil and vegetation continue to be analyzed by Federal agencies. DOE reported the following positive results:

2 of 30 vegetation samples yielded 80 to 260 microcuries per square meter ($\mu\text{Ci}/\text{m}^2$) iodine-131. The minimum detectable activity (MDA) is $30 \mu\text{Ci}/\text{m}^2$. The remaining 28 samples were below MDA. 12 soil samples were less than the MDA of $600 \mu\text{Ci}/\text{m}^2$.

All air and water analyses by DOE and EPA were less than the MPC in 10 CFR 20.

Exposures of Met Ed and Contractor personnel from March 29 to April 11 are:

<u>Dose Range (Whole Body Gamma)</u>	<u>Number in Range</u>
100 - 250 mrem	118
251 - 500 mrem	25
501 - 750 mrem	12
751 - 1000 mrem	2
1000 - 2000 mrem	3
2000 - 3000 mrem	0
3000 - 4000 mrem	3*

* Reported in PNO-79-67K

CONTINUED
IMMEDIATE PRELIMINARY NOTIFICATION

April 13, 1979
PNO-79-67T

Contact: RCPaulus, IE x27246 DThompson, IE x28487

Distribution: Transmitted H St 7:16
Chairman Hendrie Commissioner Bradford
Commissioner Kennedy Commissioner Ahearne
Commissioner Gilinsky

S. J. Chilk, SECY
C. C. Kammerer, CA
(For Distribution)

Transmitted: MNBB 7:30
L. V. Gossick, EDO
H. L. Ornstein, EDO
J. J. Fouchard, PA
N. M. Haller, MPA
R. G. Ryan, OSP
H. K. Shapar, ELD

P. Bldg 7:34
H. R. Denton, NRR
R. C. DeYoung, NRR
R. J. Mattson, NRR
V. Stello, NRR
R. S. Boyd, NRR
SS Bldg 7:38
W. J. Dircks, NMSS
S. Levine, RES

J. G. Davis, IE
Region I 7:42
Region II 7:53
Region III 7:57
Region IV 8:03
Region V 8:07
(MAIL)
J. J. Cummings, OIA
R. Minogue, SD

IE (TMI) Site 7:21 (Provide copy to STATE)
White House Situation Room 7:52
FDAA 7:25 (Provide copies to the Administrator and the Operations Center)
EPA 8:17
DOE/EOC 9:05
PEMA 9:40
BRP (State of PA) 8:18
DCPA 8:42
HEW (Pickup)

Handcarry (FAA)

IMMEDIATE
PRELIMINARY NOTIFICATION

IMMEDIATE
PRELIMINARY NOTIFICATION

April 13, 1979

PRELIMINARY NOTIFICATION OF EVENT OR UNUSUAL OCCURRENCE -- PNO-79-67T (Correction)

This preliminary notification constitutes summary information of an event of safety or public interest significance. The information presented is a summary of information as of 7:00 a.m. on April 12, 1979.

Facility: Three Mile Island Unit 2
Middletown, Pennsylvania (DN 50-320)

Subject: NUCLEAR INCIDENT AT THREE MILE ISLAND

The radiation activity for soil and vegetation samples on page 2 of PNO-79-67T should read:

".... 80 to 260 picocuries per square meter (pCi/m²) iodine-131.

The minimum detectable activity (MDA) is 30 pCi/m². The remaining 28 samples were below MDA. Twelve (12) soil samples were less than the MDA of 600 pCi/m²."

Contact: RCPaulus, IE x27246; DThompson, IE x28487

Distribution: Transmitted H St 9:45a

Chairman Hendrie

Commissioner Bradford

S. J. Chilk, SECY

Commissioner Kennedy

Commissioner Ahearne

C. C. Kammerer, CA

Commissioner Gilinsky

(For Distribution)

Transmitted: MNBB 9:46a

P. Bldg 9:48

J. G. Davis, IE

L. V. Gossick, EDO

H. R. Denton, NRR

Region I 9:55

H. L. Ornstein, EDO

R. C. DeYoung, NRR

Region II 10:06

J. J. Fouchard, PA

R. J. Mattson, NRR

Region III 10:00

N. M. Haller, MPA

V. Stello, NRR

Region IV 10:02 10:05

R. G. Ryan, OSP

R. S. Boyd, NRR

Region V 10:03

H. K. Shapar, ELD

SS Bldg 9:50

(MAIL)

W. J. Dircks, NMSS

J. J. Cummings, OIA

S. Levine, RES

R. Minogue, SD

IE (TMI) Site 9:56 (Provide copy to STATE)

White House Situation Room 10:35

FDA 10:45 (Provide copies to the Administrator and the Operations Center)

EPA 10:55

DOE/EOC 10:20

PEMA 11:00

BRP (State of PA) 11:10

DCPA 11:20

HEW (Pickup)

Handcarry (FAA)

IMMEDIATE

PRELIMINARY NOTIFICATION

(PNO-79-67T (Correction))

IMMEDIATE
PRELIMINARY NOTIFICATION

April 14, 1979

PRELIMINARY NOTIFICATION OF EVENT OR UNUSUAL OCCURRENCE--PNO-79-67U

This preliminary notification constitutes summary information of an event of safety or public interest significance. The information presented is a summary of information as of 7:00 a.m. on April 14, 1979.

Facility: Three Mile Island Unit 2
Middletown, Pennsylvania (DN50-320)

Subject: NUCLEAR INCIDENT AT THREE MILE ISLAND

Plant Status:

At 1003 on April 13, 1979, cooldown of the primary coolant system was initiated marking the first step toward placing the reactor into natural circulation. It is anticipated that the primary system would be cooled from 280 degrees F to approximately 230 degrees F during this phase. As of 0200 on April 14, primary coolant temperature had decreased to approximately 250 degrees F and cooldown had slowed considerably. Four of the incore thermocouple readings remained above 300 degrees F with the highest at 350 degrees F.

A pressurized primary coolant sample was taken on April 13 and is being sent to Idaho Falls, Idaho for analysis by Allied Chemical. The sample left Harrisburg at 0400 on April 14 and estimated time of arrival at Idaho Falls is 0945 EST.

Environmental Status:

Offsite radiation levels identified by NRC survey teams were consistent with normal background levels (0.02 mR/hr maximum). The results were obtained from routine surveys performed on the east and west sides of the Susquehanna River at distances up to five miles north and south of the site.

By 11:15 a.m. on April 13, 1979, 292 local residents were scanned with the whole body counter located in Middletown. Scan results indicate no radiation levels above normal body levels.

The following Aerial Measuring System surveys were conducted on April 13. Wind speed ranged from 14 to 16 mph. No defined plume was identified.

<u>Time</u>	<u>Max. Radiation Level</u>	<u>Distance from Site</u>
0908 - 0940	0.03 mR/hr	1000 feet
1454 - 1530	0.03 mR/hr	900 feet

CONTINUED
IMMEDIATE PRELIMINARY NOTIFICATION

The NRC took a 24-hour air sample near the observation center starting at 1600 hours on April 12, 1979. The results indicated less than 1.5 picocuries per cubic meter of iodine-131. The 10 CFR 20 limit for iodine-131 is 100 picocuries per cubic meter.

Dose rates (47 locations) as measured by NRC thermoluminescent dosimeters for the past 24-hour period of April 13 are near expected natural background levels.

The State of Maryland reported finding less than 6 picocuries of iodine per liter of milk in 6 samples taken during April 7 to April 11. The milk samples were taken from farms around TMI.

Sixty-two EPA air samples collected on April 9 and 10, indicated no detectable activity, while six indicated activities which ranged from 0.092 to 0.81 picocuries per cubic meter of iodine-131. EPA samples of milk, soil, vegetation, water and various species of fish did not reveal any activity above background.

Correction to PNO-79-67E dated March 31, 1979. The initial report of licensee TLD data was based on a telephone report. The following is based on the TLD vendor's formal report. The first quarter 1979 TLD readings ranged from background to a high of 1044 mR at the licensee fence in the NNW sector. The highest reading TLD located in an offsite populated area was about 26 mR of which about 15 mR was background exposure. A TLD located midway across the north bridge about 0.3 miles NNE of the plant recorded 44 mR, including background. These revised estimates do not significantly affect previous estimates of population doses.

CONTINUED
IMMEDIATE PRELIMINARY NOTIFICATION

April 14, 1979

PNO-79-67U

Contact: RCPaulus, IE x27246 DThompson, IE x28487

Distribution: Transmitted H St 10:25

Chairman Hendrie

Commissioner Bradford

S. J. Chilk, SECY

Commissioner Kennedy

Commissioner Ahearne

C. C. Kammerer, CA

Commissioner Gilinsky

(For Distribution)

Transmitted: MNBB 10:28

P. Bldg 10:32

J. G. Davis, IE

L. V. Gossick, EDO

H. R. Denton, NRR

Region I 10:43

H. L. Ornstein, EDO

R. C. DeYoung, NRR

Region II 10:50

J. J. Fouchard, PA

R. J. Mattson, NRR

Region III 10:53

N. M. Haller, MPA

V. Stello, NRR

Region IV 10:59

R. G. Ryan, OSP

R. S. Boyd, NRR

Region V 11:04

H. K. Shapar, ELD

SS Bldg 10:36

(MAIL)

W. J. Dircks, NMSS

J. J. Cummings, OIA

S. Levine, RES

R. Minogue, SD

IE (TMI) Site 10:39 (Provide copy to STATE)

White House Situation Room 1324FDAA 13:04 (Provide copies to the Administrator and the Operations Center)

EPA

DOE/EOS 11:11

PEMA

BRP (State of PA) 1407DCPA 1345

HEW (Pickup)

Handcarry (FAA)

IMMEDIATE
PRELIMINARY NOTIFICATION

IMMEDIATE
PRELIMINARY NOTIFICATION

April 15, 1979

PRELIMINARY NOTIFICATION OF EVENT OR UNUSUAL OCCURRENCE--PNO-79-67V

This preliminary notification constitutes summary information of an event of safety or public interest significance. The information presented is a summary of information as of 7:00 a.m. on April 15, 1979.

Facility: Three Mile Island Unit 2
Middletown, Pennsylvania (DN50-320)

Subject: NUCLEAR INCIDENT AT THREE MILE ISLAND

Plant Status:

As of 0600 on April 15, 1979, primary coolant temperature had stabilized at approximately 250 degrees F. Four of the incore thermocouple readings remain above 300 degrees F with the highest at 348 degrees F.

The hydrogen recombiner that failed on April 13 has been repaired and is in the process of being restored to service.

The staff has completed a preliminary evaluation of TMI-2 fuel damage. Examinations of data from core thermocouples, incore detectors and excore ion chambers, and analyses of core parameters such as primary coolant pressure for the first fifteen hours of the transient show several periods of significant core uncovering. These were time periods during which portions of the fuel elements were cooled by steam rather than pressurized water which is the normal cooling method.

It was during these periods of deficient cooling that extensive damage to the fuel elements occurred. This damage occurred primarily by oxidation of the fuel cladding and other zirconium alloy components, which were embrittled and lost structural integrity in some regions of the core. Estimates of the extent of damage were calculated from fission product and hydrogen releases inside the plant and radiochemical analysis of the reactor coolant water. The analyses indicate that significant cladding oxidation occurred in the upper regions of the core and most fuel rods have some damage. The core geometry in the upper regions of the core, especially near the center, is believed to be severely distorted due to loss of fuel cladding integrity in that region. However, the lower and peripheral portions of the core are believed to have retained their basic structural integrity. The highest fuel temperature during the transient is estimated by these damage mechanism analyses to be well below the 5100 degrees F fuel melting point. Previous results of radiochemical analyses of primary coolant samples support this conclusion of little or no fuel melting.

CONTINUED
IMMEDIATE PRELIMINARY NOTIFICATION

Environmental Status:

Offsite radiation levels identified by NRC survey teams were consistent with normal background levels (0.02 mR/hr maximum). The results were obtained from routine surveys performed on the east and west sides of the Susquehanna River at distances up to five miles north and south of the site.

By 9:30 a.m. on April 14, 1979, 375 local residents were scanned with the whole body counter located in Middletown. Scan results indicate no radiation levels above normal body levels.

The following Aerial Measuring System surveys were conducted on April 14. Wind speed was variable. The principle isotope is Xe-133.

<u>Time</u>	<u>Max. Radiation Level</u>	<u>Sector</u>	<u>Distance from Site</u>
1138 - 1221	0.04 mR/hr	270°	1000 feet

The NRC took a 24-hour air sample near the observation center starting at 1600 hours on April 13, 1979. The results indicated less than 3.0 picocuries per cubic meter of iodine-131. The 10 CFR 20 limit for iodine-131 is 100 picocuries per cubic meter.

Dose rates (47 locations) as measured by NRC thermoluminescent dosimeters for the past 24-hour period of April 14 are near expected natural background levels.

A pressurized primary coolant sample was taken April 13, 1979. The six individuals involved received a total radiation dose of 800 mrem. The highest individual dose was 270 mrem.

During the period of 1600 hours on April 13 to 1600 hours on April 14, DOE collected and analyzed the following samples:

<u>Number/Type</u>	<u>I-131 MDA</u>
4 Water	7×10^{-8} microcuries/cubic centimeter
4 Vegetation	0.04 nanocuries/square meter
4 Air (3 ground level and 1 helicopter)	3×10^{-12} microcuries/cubic centimeter
12 Total	

CONTINUED
IMMEDIATE PRELIMINARY NOTIFICATION

April 15, 1979
PNO-79-67V

All water, 3 vegetation, and 1 ground level air samples indicated less than MDA for I-131. One vegetation (grass) sample indicated 0.16 nanocuries/square meter I-131. Two ground level air samples (collected at the same location and time side-by-side on April 13 at 11:45 a.m.) indicated I-131 levels of 9.5 picocuries per cubic meter. An air sample taken by helicopter 100 meters downwind of the auxiliary building stack (within the restricted area) indicated an I-131 activity of 119 picocuries per cubic meter. The 10 CFR 20 limit is 9000 picocuries per cubic meter.

The cause of this increase in radioactivity in certain environmental samples is not known but is under investigation. It is possible that the increase is the result of the change-out of the charcoal filters.

Contact: GCGower, IE x27246 DThompson, IE x28487

Distribution: Transmitted H St 1520
Chairman Hendrie Commissioner Bradford
Commissioner Kennedy Commissioner Ahearne
Commissioner Gilinsky

S. J. Chilk, SECY
C. C. Kammerer, CA

Transmitted: MNBB 1555
L. V. Gossick, EDO
H. L. Ornstein, EDO
J. J. Fouchard, PA
N. M. Haller, MPA
R. G. Ryan, OSP
H. K. Shapar, ELD

P. Bldg 1524
H. R. Denton, NRR
R. C. DeYoung, NRR
R. J. Mattson, NRR
V. Stello, NRR
R. S. Boyd, NRR
SS Bldg 1540
W. J. Dircks, NMSS
S. Levine, RES

J. G. Davis, IE
Region I 1600
Region II 16:25
Region III 16:03
Region IV 16:05
Region V 16:07
(MAIL)
J. J. Cummings, OIA
R. Minogue, SD

IE (TMI) Site 16:30 (Provide copy to STATE)
White House Situation Room 16:40
FDAA 17:40 (Provide copies to the Administrator and the Operations Center)
EPA 17:52
DOE/EQS 17:50
PEMA no action
BRP (State of PA) 18:05
DCPA 18:20
HEW (Pickup)

Handcarry (FAA)

IMMEDIATE
PRELIMINARY NOTIFICATION

W

IMMEDIATE
~~PRELIMINARY NOTIFICATION~~

April 16, 1979

PRELIMINARY NOTIFICATION OF EVENT OR UNUSUAL OCCURRENCE -- PNO-79-67W

This preliminary notification constitutes summary information of an event of safety or public interest significance. The information presented is a summary of information as of 7:00 a.m. on April 16, 1979.

Facility: Three Mile Island Unit 2
Middletown, Pennsylvania (DN 50-320)

Subject: NUCLEAR INCIDENT AT THREE MILE ISLAND

Plant Status:

The primary coolant temperature remains at approximately 250 degrees F. Four of the incore thermocouple readings remain above 300 degrees F with the highest at 344 degrees F.

The hydrogen recombiner that failed on April 13 has been repaired and is in service. At 0800 on April 15, 1979, the hydrogen concentration was reported to be 1.46% compared to the reading of 1.48% reported at 2200 hrs. on April 12, 1979 before the recombiner failed.

Environmental Status:

Offsite radiation levels indentified by NRC survey teams were consistent with normal background levels (0.02 mR/hr. maximum). The results were obtained from routine surveys performed on the east and west sides of the Susquehanna River at distances up to five miles north and south of the site.

By 4:00 p.m. on April 15, 1979, 482 local residents had been scanned with the whole body counter located in Middletown. Scan results indicated no radiation levels above normal body levels.

The following Aerial Measuring System survey was conducted on April 15. Wind speed variable 5-20 mph.

<u>Time</u>	<u>Max. Radiation Level</u>	<u>Sector</u>	<u>Distance from Site</u>
1700-1815	0.013 mR/hr	120°	1/4 mile (elevation 300 ft)

CONTINUED
IMMEDIATE
PRELIMINARY NOTIFICATION

The NRC took an air sample near the observation center starting at 1200 on April 14 and ending at 1700 on April 15. Analysis of this sample indicated that the concentration of iodine-131 during the 29 hour period averaged 4.1×10^{-12} uc/cc.

Dose rates (47 locations) as measured by NRC thermoluminescent dosimeters for the past 24-hour period of April 16 are near expected natural background levels.

Iodine cartridge measurements (from the Unit 2 vent stack) indicate that increased iodine release rates began occurring on or around April 12. Iodine concentrations measured in the ventilation stack are:

<u>Time</u>	<u>Activity (uc/cc)</u>
4/10 (1608) - 4/11 (1800)	2.3×10^{-8}
4/11 (1920) - 4/13 (2315)	1.2×10^{-7}
4/14 (1030) - 4/14 (1915)	1.4×10^{-7}
4/14 (1915) - 4/15 (0525)	2.5×10^{-7}
4/15 (0525) - 4/15 (0804)	2.7×10^{-7}
4/15 (0805) - 4/15 (1802)	3.8×10^{-7}
4/15 (1802) - 4/15 (2140)	2.1×10^{-7}

Environmental samples obtained during this period have shown some increase in radioactivity. While the exact source of the increased activity has not been determined, it may be related to changeout of filters in the Auxiliary Building and/or tripout of the Auxiliary Building ventilation fan. Efforts are in progress to correlate work activities with the increased Iodine concentrations.

On April 15 and 16, DOE, NRC, and the licensee measured Iodine levels in the switchyard, 0.6 miles east of the reactor site. Airplane over-flight occurring at the same time indicated a very narrow plume. Recent measurements (0200 4/16) indicated 9.4×10^{-11} uc/cc for NRC sample, 7.4×10^{-11} uc/cc for licensee sample and 6.0×10^{-11} uc/cc for the DOE sample. The MPC for iodine-131 in unrestricted areas is 1×10^{-10} uc/cc. All samples were side by side samples.

The State of Pennsylvania has been informed of these results. In addition, the State will be provided with the DOE samples for analysis.

Contact: GCGower, IE x 27246; DThompson, IE x 28487

CONTINUED
IMMEDIATE
PRELIMINARY NOTIFICATION

April 16, 1979
PNO-79-67W

Distribution: Transmitted H St 12:42

Chairman Hendrie
Commissioner Kennedy
Commissioner Gilinsky

Commissioner Bradford
Commissioner Ahearne

S. J. Chilk, SECY
C. C. Kammerer, CA
(For Distribution)

Transmitted: MNBB 12:46

L. V. Gossick, EDO
H. L. Ornstein, EDO
J. J. Fouchard, PA
N. M. Haller, MPA
R. G. Ryan, OSP
H. K. Shapar, ELD

P. Bldg 1:18
H. R. Denton, NRR
R. C. DeYoung, NRR
R. J. Mattson, NRR
V. Stello, NRR
R. S. Boyd, NRR
SS Bldg 1:24
W. J. Dircks, NMSS
S. Levine, RES

J. G. Davis, IE
Region I 1:27
Region II 1:30
Region III 1:35
Region IV 1:40
Region V 1:50
(MAIL)
J. J. Cummings, OIA
R. Minogue, SD

IE (TMI) Site 12:50 (Provide copy to STATE)

White House Situation Room 2:20

FDAA 2:02 (Provide copies to the Administrator and the Operations Center)

EPA 2:25

DOE/EOC 1:55

PEMA 2:42

BRP (State of PA) 4:50

DCPA 4:21

HEW (Pickup)

Handcarry (FAA)

IMMEDIATE
PRELIMINARY NOTIFICATION

28

IMMEDIATE
PRELIMINARY NOTIFICATION

April 17, 1979

PRELIMINARY NOTIFICATION OF EVENT OR UNUSUAL OCCURRENCE -- PNO-79-67X

This preliminary notification constitutes summary information of an event of safety or public interest significance. The information presented is a summary of information as of 7:00 a.m. on April 17, 1979.

Facility: Three Mile Island Unit 2
Middletown, Pennsylvania (DN 50-320)

Subject: NUCLEAR INCIDENT AT THREE MILE ISLAND

Plant Status

The primary coolant temperature remains at approximately 250 degrees F. Three of the incore thermocouple readings remain above 300 degrees F with the highest at 340 degrees F.

As of 0330 April 17, twenty of 90 charcoal filter elements in train A of the Auxiliary Building Ventilation system have been replaced. This work began on April 12.

The containment hydrogen concentration has been tested. Results indicate a level of about 1.36%.

Environment Status

Offsite radiation levels identified by NRC survey teams were consistent with normal background levels (0.02 mR/hr. maximum) with the exception of one reading of 0.14 mR/hr. These results were obtained from routine surveys performed downwind on the east side of the Susquehanna River at distances up to five miles north and south of the site.

By 3:00 p.m. on April 16, 571 local residents had been scanned with the whole body counter located in Middletown. Scan results indicate no radiation levels above normal body levels.

An Aerial Measuring System (AMS) survey was conducted on April 16. The wind speed was 5 mph. No plume could be identified. At 1/4 mile from the reactor building, readings of 0.030 - 0.040 mR/hr were observed from 180 - 270°. These readings appeared to be independent of the wind direction.

Dose rates (47 locations) as measured by NRC thermoluminescent dosimeters (TLD's) for the past 24-hour period of April 17 are near expected natural background levels.

CONTINUED
IMMEDIATE PRELIMINARY NOTIFICATION

Iodine concentrations measured in the Unit 2 ventilation stack since PNO-79-67W (April 16, 1979) are:

<u>Time</u>	<u>Activity (uCi/cc)</u>
4/15 (2140) - 4/15 (2357)	2.5×10^{-7}
4/16 (0408) - 4/16 (0758)	2.3×10^{-7}
4/16 (1156) - 4/16 (1550)	2.1×10^{-7}
4/16 (1556) - 4/16 (1810)	3.6×10^{-7}
4/16 (1810) - 4/16 (2356)	1.4×10^{-7}

The NRC took the daily air sample near the observation center starting at 1703 on April 15 and ending at 1747 on April 16. Analysis of this sample indicated that the concentration of Iodine-131 during the 24-hour period averaged 1.7×10^{-11} uCi/cc (17 picocuries/m³) which correlates with the plume wind being in this sector a large percentage of the time.

In response to increased Iodine-131 levels observed in environmental air samples, NRC has been taking approximately 5 air samples in each 8-hour period. During the 24-hour period ending midnight - April 16, 1979, three air samples from areas downwind of the plant were between 1.1 and 1.2×10^{-10} uCi/ml (110-120 picocuries per cubic meter). The average of the 11 air samples was 6.5×10^{-11} uCi/cc (65 picocuries/m³). The 8 samples taken since 10 p.m. on April 16, 1979, have shown no activity above the MDA (approximately 20 picocuries/m³). Since the Iodine-131 release rates are similar to previous rates, the observed increases are believed due to meteorological differences. Review of plant operations and possible release paths indicate that the source of the Iodine-131 is apparently the monitored release through the ventilation stack. However several changes to in-plant conditions were made. The makeup tank pressure was reduced. A portion of the charcoal filters in the Auxiliary Building ventilation system was replaced and areas in the Auxiliary Building were sprayed with sodium hydroxide and sodium thiosulfate.

During the period April 13 to 16, a total of 54 DOE samples including 1 soil sample, 4 rain water samples, 16 standing water samples, 22 grass samples, 8 ground level air filter samples and 3 air filter samples from helicopter flights were analyzed by DOE using a GE-Li gamma spectrometer. The samples were collected in the path of air discharges from the Three Mile Island station. Fourteen of the grass samples indicated that

CONTINUED
IMMEDIATE PRELIMINARY NOTIFICATION

Iodine-131, if present, was less than the minimum detectable activity (MDA) of 4.0×10^{-5} microcuries per square meters (40 picocuries/square meter). The eight samples that showed results above MDA ranged from 4.0×10^{-5} microcuries per square meter (40 picocuries/square meters) to 7.3×10^{-4} microcuries per square meter (730 picocuries/square meters). Soil, standing water, and rain water samples all indicated less than the MDA's. The MDA for soil is 7.0×10^{-4} microcuries per square meter (700 picocuries/square meters); and for water is less than 7.0×10^{-8} microcuries per cubic centimeter (70 picocuries per liter).

The Commonwealth of Pennsylvania, DER, analyzed two milk samples taken on April 16, 1979. There was no detectable Iodine-131.

EPA analyzed nine air samples between April 10 and April 11. Iodine-131 activity ranged from 1.2×10^{-13} to 1.7×10^{-12} uCi/cc. (0.12 - 1.7 picocuries per cubic meter). Twenty-five soil samples were analyzed and showed only natural activity, including normal background levels of Cs-137. EPA TLD's from 34 locations for the period March 31 through April 8 showed background except for two, York Haven and Goldsboro, which showed 2.0 and 2.5 mR respectively for this period. Personnel badges from 44 residents for the same period showed no net exposures above background.

The Commonwealth of Pennsylvania has been informed of these results.

Contact: GCGower, IE x 27246; DThompson, IE x28487

<u>Distribution:</u> Transmitted H St <u>1:46</u>		
Chairman Hendrie	Commissioner Bradford	S. J. Chilk, SECY
Commissioner Kennedy	Commissioner Ahearne	C. C. Kammerer, CA
Commissioner Gilinsky		(For Distribution)
Transmitted: MNBB <u>1:49</u>	P. Bldg <u>1:53</u>	J. G. Davis, IE
L. V. Gossick, EDO	H. R. Denton, NRR	Region I <u>2:04</u>
H. L. Ornstein, EDO	R. C. DeYoung, NRR	Region II <u>2:13</u>
J. J. Fouchard, PA	R. J. Mattson, NRR	Region III <u>2:20</u> <u>2:49</u>
N. M. Haller, MPA	V. Stello, NRR	Region IV <u>2:20</u>
R. G. Ryan, OSP	R. S. Boyd, NRR	Region V <u>2:34</u>
H. K. Shapar, ELD	SS Bldg <u>1:58</u>	(MAIL)
	W. J. Dircks, NMSS	J. J. Cummings, OIA
	S. Levine, RES	R. Minogue, SD

IE (TMI) Site 1:44 (Provide copy to STATE)
White House Situation Room 3:30
FDAA 4:07 (Provide copies to the Administrator and the Operations Center)
EPA 2:55
DOE/EOC 4:44
PEMA 2:35
BRP (State of PA) 2:55
DCPA 2:35
HEW (Pickup)
Handcarry (FAA)

268

IMMEDIATE
PRELIMINARY NOTIFICATION

April 18, 1979

PRELIMINARY NOTIFICATION OF EVENT OR UNUSUAL OCCURRENCE -- PNO-79-67Y

This preliminary notification constitutes summary information of an event of safety or public interest significance. The information presented is a summary of information as of 7:00 a.m. on April 18, 1979.

Facility: Three Mile Island Unit 2
Middletown, Pennsylvania (DN 50-320)

Subject: NUCLEAR INCIDENT AT THREE MILE ISLAND

Plant Status

The average primary coolant temperature is 236 degrees F. The decrease in primary coolant temperature was a result of an increase in the steaming rate. This increase was achieved by opening additional valves to the main condenser. Two of the incore thermocouple readings remain above 300 degrees F with the highest at 330 degrees F.

As of 0530 April 18, fifty of 90 charcoal filter elements in train A of the Auxiliary Building Ventilation system have been replaced. This work began on April 12.

Pressurizer level transmitter LT-2 became erratic over the period 1745 - 2235 on April 17 but is now tracking again. Calibration of the Heise gauge, to be used as a backup pressure level measurement, is continuing.

Environment Status

Offsite radiation levels identified by NRC survey teams were consistent with normal background levels (0.02 mR/hr. maximum). These results were obtained from routine surveys performed downwind on the east side of the Susquehanna River at distances up to five miles north and south of the site.

By 2:15 p.m. on April 17, 632 local residents had been scanned with the whole body counter located in Middletown. Scan results indicate no radiation levels above normal body levels.

No Aerial Measuring System (AMS) survey was conducted on April 17. However, an AMS survey was requested by NRC based on a short lived increase in the iodine discharge rate between 3 and 4 a.m. on April 18. The AMS survey results are not yet available.

CONTINUED
IMMEDIATE PRELIMINARY NOTIFICATION

During the 24-hour period ending midnight April 17, 1979, seven of 12 air samples showed no activity above the minimum detectable activity. None of the other five samples showed Iodine-131 greater than 1×10^{-10} uCi/cc (100 picocuries per cubic meter). On the morning of April 18, 1979, one of three samples showed Iodine-131 concentration of 2×10^{-10} microcuries/milliliter (200 picocuries per cubic meter) during the period of 3 to 4 a.m. The remaining two samples were approximately 5.0×10^{-11} microcuries/milliliter (50 picocuries/cubic meter). The last sample analyzed covered the period 0420 to 0527. The cause of the high reading is believed to be due primarily to meteorological conditions; however, several in-plant events were also in progress. They are being analyzed for possible contributions to this reading to determine appropriate corrective action. One grass sample taken downwind of the plant showed 6.13×10^{-4} microcuries per square meter (613 picocuries per square meter). Additional milk and vegetation samples have been taken, but have not been analyzed.

Dose rates (47 locations) as measured by NRC thermoluminescent dosimeters (TLD's) for the past 24-hour period of April 18 are near expected natural background levels.

Iodine concentrations measured in the Unit 2 ventilation stack since PNO-79-67X (April 17, 1979) are:

<u>Time</u>	<u>Activity (uCi/ml)</u>
4/16 (2356) - 4/17 (0402)	1.2×10^{-7}
4/17 (0402) - 4/17 (0803)	1.2×10^{-7}
4/17 (0803) - 4/17 (1226)	1.4×10^{-7}
4/17 (1226) - 4/17 (1634)	1.3×10^{-7}
4/17 (1640) - 4/17 (1946)	2.3×10^{-7}
4/17 (1958) - 4/17 (2357)	2.1×10^{-7}

The NRC took the daily air sample near the observation center starting at 1747 on April 16 and ending at 1620 on April 17. Analysis of this sample indicated that the concentration of Iodine-131 during the approximate 23-hour period averaged less than 2.4×10^{-12} uCi/cc (less than 2.4 picocuries/cubic meter). The plume wind was not in this sector a large percentage of the time during the sampling period.

No new data were available from DOE, EPA, FDA or Commonwealth of Pennsylvania, Department of Environmental Resources.

The Commonwealth of Pennsylvania has been informed of these results.

CONTINUED
IMMEDIATE PRELIMINARY NOTIFICATION

Contact: BPaulus, IE x 27246; DThompson, IE x 28487

Distribution: Transmitted H St 12:15p

Chairman Hendrie

Commissioner Kennedy

Commissioner Gilinsky

Commissioner Bradford

Commissioner Ahearne

S. J. Chilk, SECY

C. C. Kammerer, CA

(For Distribution)

Transmitted: MNBB 12:20p

L. V. Gossick, EDO

H. L. Ornstein, EDO

J. J. Fouchard, PA

N. M. Haller, MPA

R. G. Ryan, OSP

H. K. Shapar, ELD

P. Bldg 12:25

H. R. Denton, NRR

R. C. DeYoung, NRR

R. J. Mattson, NRR

V. Stello, NRR

R. S. Boyd, NRR

SS Bldg 12:36

W. J. Dircks, NMSS

S. Levine, RES

J. G. Davis, IE

Region I 12:32

Region II 12:41

Region III 12:45

Region IV 12:50

Region V 12:55

(MAIL)

J. J. Cummings, OIA

R. Minogue, SD

IE (TMI) Site 12:28 (Provide copy to STATE)

White House Situation Room 2:00

FDAA 2:30 (Provide copies to the Administrator and the Operations Center)

EPA 3:25

DOE/EOC 2:55

PEMA 3:00

BRP (State of PA) 3:20

DCPA 3:45

HEW (Pickup)

Handcarry (FAA)

IMMEDIATE
PRELIMINARY NOTIFICATION

BIB

IMMEDIATE
PRELIMINARY NOTIFICATION

April 19, 1979

PRELIMINARY NOTIFICATION OF EVENT OR UNUSUAL OCCURRENCE -- PNO-79-67Z

This preliminary notification constitutes summary information of an event of safety or public interest significance. The information presented is a summary of information as of 7:00 a.m. on April 19, 1979.

Facility: Three Mile Island Unit 2
Middletown, Pennsylvania (DN 50-320)

Subject: NUCLEAR INCIDENT AT THREE MILE ISLAND

Plant Status

The average primary coolant temperature is 235 degrees F. Preparations are being made to further decrease coolant temperature by admitting steam to the main condensor through the main turbine. Two of the incore thermocouple readings remain above 300 degrees F with the highest at 329 degrees F.

Replacement of the charcoal filter elements in train A of the Auxiliary Building Ventilation system is expected to be completed this morning. Preoperational tests of train A will then be conducted.

Pressurizer level transmitter LT-2 failed at 11:30 p.m. on April 18. Calibration of an alternate method to be used as a backup pressure level measurement is continuing.

A pressurized primary coolant sample was taken at 9:45 p.m. on April 18, 1979 and sent to B&W, Lynchburg, VA. for analysis via a National Guard Aircraft at 11:35 p.m.

Environment Status

Offsite radiation levels identified by NRC survey teams were consistent with normal background levels (0.02 mR/hr maximum). These results were obtained from routine surveys performed downwind on the east side of the Susquehanna River at distances up to five miles north and south of the site.

By 7:00 p.m. on April 18, 721 local residents had been scanned with the whole body counter located in Middletown. Scan results indicate no radiation levels above normal body levels due to TMI operations. The scanning of local residents has been terminated.

An Aerial Measuring System (AMS) survey was conducted beginning at 6:38 a.m. on April 18, 1979. A plume reading 0.02 mR/hr was identified 0.25 miles SE of the plant and followed to 1.5 miles. Spectral analysis indicated

CONTINUED
IMMEDIATE PRELIMINARY NOTIFICATION

the presence of Xenon-133. An air sample taken in the plume 200 meters downwind from the stack showed 8.6×10^{-11} microcuries per cubic centimeter of Iodine-131 (86 picocuries per cubic meter).

During the period from 0530 April 18 to 0530 April 19 three of four air samples collected around the site showed no activity above the minimum detectable activity (MDA). The meteorological conditions during this period were more favorable than those of the previous day. The fourth sample shows an Iodine-131 concentration of 2.7×10^{-11} uc/cc (27 picocuries per cubic meter). Data from five other samples have not as yet been analyzed. Three soil samples and three grass samples showed no activity above the MDA. The MDA for grass was 2.4×10^{-4} microcuries per square meter (240 picocuries per square meter); the MDA for soil was about 3.7×10^{-7} microcuries per gram (0.37 picocuries per gram). One grass sample taken showed 5.5×10^{-4} microcuries per square meter (550 picocuries per square meter).

Dose rates (47 locations) as measured by NRC thermoluminescent dosimeters (TLD's) for the past 24-hour period are near expected natural background levels.

Iodine concentrations measured in the Unit 2 ventilation stack since PNO-79-67Y (April 18, 1979) are:

<u>Time</u>	<u>Activity (uCi/ml)</u>
4/17 (2357) - 4/18 (0405)	2.2×10^{-7}
4/18 (0405) - 4/18 (0550)	4.5×10^{-7}
4/18 (0550) - 4/18 (0800)	2.1×10^{-7}
4/18 (0805) - 4/18 (0945)	1.8×10^{-7}
4/18 (0945) - 4/18 (1200)	1.4×10^{-7}
4/18 (1204) - 4/18 (1647)	7.2×10^{-8}
4/19 (0001) - 4/19 (0358)*	7.5×10^{-8}

*The stack monitor used for these measurements was out of service from 12:00 a.m. on April 18 to 12:00 p.m. April 18, 1979.

CONTINUED
IMMEDIATE PRELIMINARY NOTIFICATION

April 19, 1979
PNO-79-67Z

The NRC took the daily air sample near the observation center starting at 1600 on April 17 and ending at 1600 on April 18. Analysis of this sample indicated that the concentration of Iodine-131 during the approximate 24-hour period averaged less than 2.6×10^{-12} microcuries per milliliter (less than 2.6 picocuries per cubic meter).

EPA submitted airborne iodine analyses of air samples collected from 31 stations on April 12 and 13. Nineteen of the samples were reported to have positive measurements of Iodine-131 from 7.2×10^{-14} microcuries per cubic centimeter (0.072 picocuries per cubic meter) for a location 25 miles west of the plant to 6.6×10^{-13} microcuries per cubic centimeters (0.66 picocuries per cubic meter) at a location about 5 miles west of the plant. EPA air samples collected on April 14 showed positive Iodine-131 on 6 of the 31 samples with a range of 1.5×10^{-13} to 7.9×10^{-13} microcuries for cubic centimeter (0.15 to 0.79 picocuries per cubic meter). EPA milk samples collected on April 12, 13 and 14 from 9 locations were less than MDA (10-15 picocuries per liter). Soil and vegetation samples collected on April 11 showed no activity above background.

On April 18, during a tour by NRC personnel of Hill Island, adjacent to TMI, three persons were observed. Two of the persons reported that they had been on Hill Island on March 28-30, 1979. An evaluation of their exposure is in progress. One of the three has already been counted in the whole body counter in Middletown.

The Commonwealth of Pennsylvania has been informed of these results.

Contact: RPaulus, IE x27246; DThompson, IE x28487

Distribution: Transmitted H St 12:44

Chairman Hendrie

Commissioner Kennedy

Commissioner Gilinsky

Transmitted: MNBB 12:49

L. V. Gossick, EDO

H. L. Ornstein, EDO

J. J. Fouchard, PA

N. M. Haller, MPA

R. G. Ryan, OSP

H. K. Shapar, ELD

Commissioner Bradford

Commissioner Ahearne

P. Bldg 12:52

H. R. Denton, NRR

R. C. DeYoung, NRR

R. J. Mattson, NRR

V. Stello, NRR

R. S. Boyd, NRR

SS Bldg 12:57

W. J. Dircks, NMSS

S. Levine, RES

S. J. Chilk, SECY

C. C. Kammerer, CA

(For Distribution)

J. G. Davis, IE

Region I 1:38

Region II 1:02

Region III 1:07

Region IV 1:17

Region V 1:31

(MAIL)

J. J. Cummings, OIA

R. Minogue, SD

IE (TMI) Site 1:12 (Provide copy to STATE)

White House Situation Room 2:31

FDA 2:14 (Provide copies to the Administrator and the Operations Center)

EPA 1:44

DOE/EOC 1:24

PEMA 3:05

BRP (State of PA) 3:25

DCPA 4:03

HEW (Pickup)

Handcarry (FAA)

IMMEDIATE PRELIMINARY NOTIFICATION

IMMEDIATE
PRELIMINARY NOTIFICATION

April 20, 1979

PRELIMINARY NOTIFICATION OF EVENT OR UNUSUAL OCCURRENCE -- PNO-79-67AA

This preliminary notification constitutes summary information of an event of safety or public interest significance. The information presented is a summary of information as of 7:00 a.m. on April 20, 1979.

Facility: Three Mile Island Unit 2
Middletown, Pennsylvania (DN 50-320)

Subject: NUCLEAR INCIDENT AT THREE MILE ISLAND

Plant Status

The average primary coolant temperature is 185 degrees F. The drop in temperature of 50 degrees F is due to steam being admitted directly to the main condensor through the main turbine. The highest incore thermocouple reading is 284 degrees F.

Replacement of the charcoal filter elements in Train A of the Auxiliary Building Ventilation System is completed. Work is in progress to replace several HEPA filters in the system. Train A is expected to be in service today.

Environmental Status

Offsite radiation levels identified by NRC survey teams were consistent with normal background levels (0.02 mR/hr maximum). These results were obtained from routine surveys performed downwind on the east and west sides of the Susquehanna River at distances up to five miles north and south of the site.

An Aerial Measuring System (AMS) survey was conducted beginning at 6:05 p.m. on April 19, 1979. A small plume reading 0.007 mR/hr was identified 0.25 miles SSE of the plant. Spectral analysis indicated the presence of a small amount of Xenon-133. An air sample taken in the plume showed no iodine-131.

During the period from 5:30 a.m. April 19 to 5:30 a.m. April 20, ten air samples collected around the site showed no activity above the minimum detectable activity (MDA). The five air samples taken between 5:30 a.m. April 18 and 5:30 a.m. April 19 (and not analyzed prior to issuance of PNO-79-67Z) showed no activity above the MDA. Two of three soil samples showed no activity above the MDA. The other soil sample showed 2.8×10^{-7} microcuries per gram of iodine-131. The MDA for soil was 1.4×10^{-7} microcuries per gram. All MDA's have been reduced (sensitivity increased) by a factor of two due to addition of a shield to the detector in the NRC's mobile laboratory.

Dose rates (47 locations) as measured by NRC thermoluminescent dosimeters (TLD's) for the past 24-hour period are near expected natural background levels.

CONTINUED
IMMEDIATE PRELIMINARY NOTIFICATION

April 20, 1979
PNO-79-67AA

Iodine concentrations measured in the Unit 2 ventilation stack since PNO-79-67Z (April 19, 1979) are:

<u>Time</u>	<u>Activity (uCi/cc)</u>
4/19 (0358) - 4/19 (0800)	6.6×10^{-8}
4/19 (0803) - 4/19 (1210)	1.0×10^{-7}
4/19 (1226) - 4/19 (1634)	1.8×10^{-7}
4/19 (1728) - 4/19 (2025)	1.8×10^{-7}
4/19 (2025) - 4/20 (0001)	1.2×10^{-7}
4/20 (0001) - 4/20 (0351)	3.3×10^{-7}

The NRC took the daily air sample near the observation center starting at 4:00 p.m. on April 18 and ending at 4:00 p.m. on April 19. Analysis of this sample indicated that the concentration of Iodine-131 during the 24-hour period averaged less than 2.4×10^{-12} microcuries per cubic centimeter (less than 2.4 picocuries per cubic meter).

No additional environmental data have been received from EPA or FDA.

The three persons found on Hill Island on April 18, 1979 have been whole body counted. No radiation levels above normal body levels were found.

As stated in PNO-79-67Z, the whole body scanning program for local residents has been completed. A joint press release on this subject was issued by the Commonwealth of Pennsylvania and the NRC on this date. A copy of the press release is attached to this PN.

The Commonwealth of Pennsylvania has been informed of these results.

Attachment: Press Release dated 4/20/79

Contact: RCPaulus, IE x27246 DThompson, IE x27246

Distribution: Transmitted H St 10:25

Chairman Hendrie

Commissioner Kennedy

Commissioner Gilinsky

Transmitted: MNBB 10:44

L. V. Gossick, EDO 10:58

H. L. Ornstein, EDO

J. J. Fouchard, PA

N. M. Haller, MPA

R. G. Ryan, OSP

H. K. Shapar, ELD

Commissioner Bradford
Commissioner Ahearne

P. Bldg 11:05

H. R. Denton, NRR

R. C. DeYoung, NRR

R. J. Mattson, NRR

V. Stello, NRR

R. S. Boyd, NRR

SS Bldg 11:45

W. J. Dircks, NMSS

S. Levine, RES

S. J. Chilk, SECY
C. C. Kammerer, CA
(For Distribution)

J. G. Davis, IE

Region I 11:15

Region II 11:20

Region III 11:25

Region IV 11:32

Region V 11:35

(MAIL)

J. J. Cummings, OIA

R. Minogue, SD

IE (TMI) Site 11:50 (Provide copy to STATE)

White House Situation Room 3:53

FDAA 12:40 (Provide copies to the Administrator and the Operations Center)

EPA 2:06

DOE/EOC 2:48

PEMA 12:00

BRP (State of PA) 10:40

DCPA 12:00

HEW (Pickup)

IMMEDIATE
PRELIMINARY NOTIFICATION



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

FOR IMMEDIATE RELEASE
(Friday April 20, 1979)

Middletown, Pennsylvania -- An examination of 721 persons who live close to the site of the accident that occurred March 28, 1979 at Three Mile Island has shown them to have no internal contamination from the accident, officials of the Pennsylvania Departments of Health and Environmental Resources and the Nuclear Regulatory Commission announced today. The screening program by means of a process called whole body counting was conducted jointly by these agencies, using a portable computerized detector housed in a truck parked in front of the Middletown Community Building, about three miles from the site.

The examination of these people found no radioactive elements, such as iodine-131, that have been released from the Three Mile Island facility. Trace amounts of radionuclides that are normally found in people everywhere, such as potassium-40 and cesium-137, were found by the examination.

Nine of the persons examined showed slightly more than normal amounts of naturally occurring radioactive elements that come from the noble gas radon-222 and that are called "radon daughters", because these come from the radioactive decay of radon. All nine persons have been informed by agency officials of the finding of these radon daughters in more than normal amounts. They have been told that these elements are not related to the Three Mile Island incident and that the most likely source is the natural release of low amounts of radon gas from building materials used in their homes or possibly in work places, built of stone or brick, or from other natural sources. The levels detected do not warrant any concern for the health of these nine persons and others living with them.

The 721 persons tested generally lived within three-miles of the site, on both the east and west shores of the Susquehanna River. Children as well as adults were surveyed in this program, which took place over a period of eight days and ended at 7 p.m. Wednesday, April 18.

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IMMEDIATE
PRELIMINARY NOTIFICATION

April 21, 1979

PRELIMINARY NOTIFICATION OF EVENT OR UNUSUAL OCCURRENCE -- PNO-79-67AB

This preliminary notification constitutes summary information of an event of safety or public interest significance. The information presented is a summary of information as of 7:00 a.m. on April 21, 1979.

Facility: Three Mile Island Unit 2
Middletown, Pennsylvania (DN 50-320)

Subject: NUCLEAR INCIDENT AT THREE MILE ISLAND

Plant Status

The average primary coolant temperature is being maintained at 175 degrees F by admitting steam directly to the main condensor through the main turbine. The highest incore thermocouple reading is 275 degrees F.

Train A of the Auxiliary Building Ventilation System was placed in service at 11:45 p.m. on April 20. Work is now in progress to change the charcoal filters in Train B of the Fuel Handling Building Ventilation System.

Environmental Status

Offsite radiation levels identified by NRC survey teams were consistent with normal background levels (0.02 mR/hr maximum). These results were obtained from routine surveys performed downwind on the east side of the Susquehanna River at distances up to five miles north and south of the site.

An Aerial Measuring System (AMS) survey was conducted 8:20 a.m. to 9:12 a.m. April 20, 1979. A small plume reading 0.008 mR/hr was located about 250 meters E of the Unit II vent stack at an altitude of 100 meters. Spectral analysis indicated small amount of Xenon-133. An AMS survey from 11:45 p.m. April 20 to 12:20 a.m. April 21 did not detect any airborne radioactivity. This flight occurred following the change from Filter Train B to Train A in the Auxiliary Building.

During the period from 5:30 a.m. April 20 to 5:30 a.m. April 21, seven air samples collected around the site showed no activity above the minimum detectable activity.

Dose rates (47 locations) as measured by NRC thermoluminescent dosimeters (TLDs) for the past 24-hour period are near expected natural background levels.

CONTINUED
IMMEDIATE PRELIMINARY NOTIFICATION

Iodine concentrations measured in the Unit 2 ventilation stack since PNO-79-67AA (April 20, 1979) are:

<u>Time</u>	<u>Activity (uCi/cc)</u>
4/20 (0351) - 4/20 (0820)	2.0×10^{-7}
4/20 (0820) - 4/20 (1105)	1.9×10^{-7}
4/20 (1105) - 4/20 (1300)	2.8×10^{-7}
4/20 (1300) - 4/20 (1621)	Not Analyzed
4/20 (1621) - 4/20 (2019)	1.8×10^{-7}
4/20 (2023) - 4/20 (2204)	2.3×10^{-7}
4/20 (2208) - 4/20 (2249)	3.0×10^{-7}
4/20 (2249) - 4/21 (0317)	1.1×10^{-7}
4/21 (0317) - 4/21 (0402)	7.6×10^{-8}

The NRC took the daily air sample near the observation center starting at 4:00 p.m. on April 19 and ending at 4:00 p.m. on April 20. Analysis of this sample indicated that the concentration of Iodine-131 during the 24-hour period averaged less than 1.0×10^{-12} microcuries per cubic centimeter (less than 1.0 picocuries per cubic meter).

EPA reported that of the air samples collected at 31 sampling locations on April 15 and 16 only nine showed Iodine-131 above the minimum detectable activity (MDA). The highest sample result was 2.3×10^{-12} microcuries per cubic centimeter (2.3 picocuries per cubic meter) for a sample collected April 15, 2.9 miles SSW of the plant. All other positive values were less than 4.5×10^{-13} microcuries per cubic centimeter (0.45 picocuries per cubic meter).

EPA reported that water samples taken at the plant discharges to the river on April 18, 19 and 20 and at Brunner Island on April 16, 17 and 18 downstream showed no activity above the MDA.

EPA reported no milk samples collected on April 15 or 16 contained Iodine-131 above the MDA of 15 picocuries per liter. The Pennsylvania DER reported that one sample of milk collected on April 19 at Elizabethtown contained about 15 picocuries of Iodine-131 per liter. The licensee reported that a cow's milk sample collected on April 17 contained 3.7 picocuries per liter and a goat's milk sample collected on April 16 contained 3.3 picocuries per liter. The action level is 12,000 picocuries per liter, at which time animals would be taken off pasture.

The Commonwealth of Pennsylvania has been informed of these results.

Contact: G. C. Gower, IE x27246 H. D. Thornburg, IE x28484

Distribution: Transmitted H St 10:05

Chairman Hendrie

Commissioner Bradford

Commissioner Kennedy

Commissioner Ahearne

Commissioner Gilinsky

Transmitted: MNBB 10:10

P. Bldg. 10:14

L. V. Gossick, EDO

H. R. Denton, NRR

H. L. Ornstein, EDO

R. C. DeYoung, NRR

J. J. Fouchard, PA

R. J. Mattson, NRR

N. M. Haller, MPA

V. Stello, NRR

R. G. Ryan, OSP

R. S. Boyd, NRR

H. K. Shapar, ELD

SS Bldg. 10:18

W. J. Dircks, NMSS

S. Levine, RES

S. J. Chilk, SECY
C. A. Kammerer, CA
(For Distribution)

J. G. Davis, IE
Region I 10:20

Region II 10:22

Region III 10:24

Region IV 10:27

Region V 10:26

(MAIL)

J. J. Cummings, OIA

R. Minogue, SD

IE(TMI) Site 4:00 pm (Provide copy to STATE)

White House Situation Room 11:25

FDAA 12:35 (Provide copies to the Administrator and the Operations Center)

EPA 12:02

DOE/EDC 11:30

PEMA 12:20

BRP (State of PA) 11:55

DCPA 11:30

HEW (Pickup)

IMMEDIATE
PRELIMINARY NOTIFICATION

IMMEDIATE
PRELIMINARY NOTIFICATION

April 22, 1979

PRELIMINARY NOTIFICATION OF EVENT OR UNUSUAL OCCURRENCE -- PNO-79-67AC

This preliminary notification constitutes summary information of an event of safety or public interest significance. The information presented is a summary of information as of 7:00 a.m. on April 22, 1979.

Facility: Three Mile Island Unit 2
Middletown, Pennsylvania (DN 50-320)

Subject: NUCLEAR INCIDENT AT THREE MILE ISLAND

Plant Status

The average primary coolant temperature is still being maintained at 175 degrees F by admitting steam directly to the main condenser through the main turbine. The highest incore thermocouple reading is 274 degrees F.

Now that Train A of the Auxiliary Building Ventilation System is in service, preparations are being made to change the filters in Train B. Work is also in progress to change the charcoal filters of Train A of the Fuel Handling Building Ventilation System. Train A was selected for replacement instead of Train B as reported in PNO-79-67AB.

Environmental Status

Onsite Measurements

Two Aerial Measuring System (AMS) surveys were conducted during the period 3:00 p.m. - 10:00 p.m. on April 21, 1979. No airborne radioactivity was detected.

Iodine concentrations at Unit 2 ventilation stack. (Analyzed by NRC Mobile Laboratory).

<u>Date/Time</u>	<u>Activity (uCi/cc)</u>
4/21 (0404) - 4/21 (0819)	5.2×10^{-8}
4/21 (0819) - 4/21 (1201)	8.0×10^{-8}
4/21 (1204) - 4/21 (1625)	8.8×10^{-8}
4/21 (1648) - 4/21 (2017)	4.9×10^{-8}
4/21 (2018) - 4/22 (0103)	1.1×10^{-7}
4/22 (0103) - 4/22 (0441)	1.1×10^{-7}

CONTINUED
IMMEDIATE PRELIMINARY NOTIFICATION

Off Site Measurements

Radiation Levels

Offsite radiation levels identified by NRC survey teams continue to be consistent with normal background levels (0.02 mR/hr maximum). These results were obtained from routine surveys performed downwind on the east and west sides of the Susquehanna River at distances up to five miles north and south of the site.

Dose rates (47 locations) as measured by NRC thermoluminescent dosimeters (TLDs) for the past 24-hour period are near expected natural background levels.

NRC Environmental Samples (Samples taken offsite within 3 miles of site - analyzed in mobile laboratory)

<u>Sample Type</u>	<u>Date of Sample</u>	<u>Number of Samples</u>	<u>Results</u>
air	4/21-22	9	Less than MDA*
daily air	4/21-22	1	Less than MDA
grass	4/20-21	2	Highest 2.4×10^{-4} microcurie per square meter
milk	4/19-20	5	Less than MDA

* MDA = minimum detectable activity

EPA Environmental Samples (Analyzed at Remote Laboratory)

<u>Sample Type</u>	<u>Date of Sample</u>	<u>Number of Samples</u>	<u>Results</u>
air	4/18	27	Less than MDA
air	4/18	4	Highest 2.9×10^{-12} microcuries per cubic centimeter (2.9 pico-curies/cubic meter)
milk	4/18	3	Less than MDA

All EPA samples were taken at distances greater than 3 miles from the site.

The Commonwealth of Pennsylvania has been informed of these results.

Contact: G. C. Gower, IE x27246 S. E. Bryan, IE x28019

Distribution: Transmitted H St 11:18

Chairman Hendrie

Commissioner Kennedy

Commissioner Gilinsky

Transmitted: MNBB 11:32

L. V. Gossick, EDO

H. L. Ornstein, EDO

J. J. Fouchard, PA

N. M. Haller, MPA

R. G. Ryan, OSP

H. K. Shapar, ELD

Commissioner Bradford

Commissioner Ahearne

P. Bldg. 11:37

H. R. Denton, NRR

R. C. DeYoung, NRR

R. J. Mattson, NRR

V. Stello, NRR

R. S. Boyd, NRR

SS Bldg. 11:41

W. J. Dircks, NMSS

S. Levine, RES

S. J. Chilk, SECY

C. A. Kammerer, CA

(For Distribution)

J. G. Davis, IE

Region I 11:45

Region II 11:49

Region III 11:54

Region IV 11:58

Region V 12:03

(MAIL)

J. J. Cummings, OIA

R. Minogue, SD

IE(TMI) Site 11:26 (Provide copy to STATE)

White House Situation Room 11:55

FDA 8:52 (Provide copies to the Administrator and the Operations Center)

EPA 9:00 4/23

DOE/EOC 12:13

PEMA 12:21

BRP (State of PA) 10:07 4/23

DCPA 9:45 4/23

HEW (Pickup)

IMMEDIATE
PRELIMINARY NOTIFICATION

BW

IMMEDIATE
PRELIMINARY NOTIFICATION

April 23, 1979

PRELIMINARY NOTIFICATION OF EVENT OR UNUSUAL OCCURRENCE -- PNO-79-67AD

This preliminary notification constitutes summary information of an event of safety or public interest significance. The information presented is a summary of information as of 7:00 a.m. on April 23, 1979.

Facility: Three Mile Island Unit 2
Middletown, Pennsylvania (DN 50-320)

Subject: NUCLEAR INCIDENT AT THREE MILE ISLAND

Plant Status

The average primary coolant temperature is still being maintained at 175 degrees F by admitting steam directly to the main condenser through the main turbine. The highest incore thermocouple reading is 272 degrees F.

The charcoal filters in Train A of the Fuel Handling Building have been replaced. This train is scheduled to be placed in service this date. This action is expected to further reduce the concentration of Iodine being released from the ventilation stack. The previous action of changing the charcoal filters in Train A of the Auxiliary Building Ventilation System was successful and reduced Iodine discharges by approximately 40 percent. Preparations are still being made to change the charcoal filters in Train B of the Auxiliary Building Ventilation System.

A pressurized primary coolant sample was taken at 11:30 a.m. on April 22, 1979 and sent to B&W Lynchburg, Va. for analysis.

Environmental Status

Onsite Measurements

No Aerial Measuring System (AMS) survey was conducted on April 22, 1979.

Iodine concentration at Unit 2 ventilation stack. (Analyzed by NRC Mobile Laboratory).

<u>Date/Time</u>	<u>Activity (uCi/cc)</u>
4/22 (0447) - 4/22 (0804)	8.8×10^{-8}
4/22 (0807) - 4/22 (1229)	9.3×10^{-8}
4/22 (1230) - 4/22 (1621)	9.6×10^{-8}
4/22 (1624) - 4/22 (2024)	1.3×10^{-7}
4/22 (2036) - 4/22 (2130)	1.3×10^{-7}
4/22 (2130) - 4/23 (0004)	9.6×10^{-8}
4/23 (0007) - 4/23 (0440)	5.9×10^{-8}

CONTINUED
IMMEDIATE PRELIMINARY NOTIFICATION

Offsite Measurements

Radiation Levels

Offsite radiation levels identified by NRC survey teams continue to be consistent with normal background levels (0.02 mR/hr maximum). These results were obtained from routine surveys performed downwind on the east side of the Susquehanna River at distances up to five miles north and south of the site.

Dose rates (47 locations) as measured by NRC thermoluminescent dosimeters (TLDs) for the past 24-hour period are near expected natural background levels.

NRC Environmental Samples (Samples taken offsite within 3 miles of site analyzed in mobile laboratory)

<u>Sample Type</u>	<u>Date of Sample</u>	<u>Number of Sample</u>	<u>Results</u>
air	4/22-23	7	Less than MDA*
daily air	4/21-22	1	Less than MDA

* MDA = minimum detectable activity

EPA Environmental Samples (Analyzed at Remote Laboratory)

<u>Sample Type</u>	<u>Date of Sample</u>	<u>Number of Sample</u>	<u>Results</u>
air	4/21	21	Less than MDA
air	4/21	10	Highest 8.6×10^{-13} microcuries per cubic centimeter (.86 picocuries per cubic meter)
air	4/21	2	118 picocuries per cubic meter of Xe-133 in one sample. 20 and 24 picocuries per cubic meter Kr-85.** These are approximately background levels.
Soil	4/21	31	Nothing above natural background
Vegetation	4/21	31	Nothing above natural background

All EPA samples were taken at distances greater than 2 miles from the site.

** Maximum Permissible Concentration for Xe-133 and Kr-85 is 300,000 picocuries per cubic meter.

The Commonwealth of Pennsylvania has been informed of these results.

Contact: RCPaulus, IE x27246 DThompson, IE x28487

Distribution: Transmitted H St 12:00

Chairman Hendrie
Commissioner Kennedy
Commissioner Gilinsky

Commissioner Bradford
Commissioner Ahearne

S. J. Chilk, SECY
C. C. Kammerer, CA
(For Distribution)

Transmitted: MNBB 12:04
L. V. Gossick, EDO
H. L. Ornstein, EDO
J. J. Fouchard, PA
N. M. Haller, MPA
R. G. Ryan, OSP
H. K. Shapar, ELD

P. Bldg 12:19
H. R. Denton, NRR
R. C. DeYoung, NRR
R. J. Mattson, NRR
V. Stello, NRR
R. S. Boyd, NRR
SS Bldg 12:09
W. J. Dircks, NMSS
S. Levine, RES

J. G. Davis, IE
Region I 1:31
Region II 1:36
Region III 1:24
Region IV 1:44
Region V 1:03
(MAIL)
J. J. Cummings, OIA
R. Minogue, SD

IE (TMI) Site 12:41 (Provide copy to STATE)

White House Situation Room 3:20

FDAA 1:30 (Provide copies to the Administrator and the Operations Center)

EPA 2:10

DOE/EOC 2:15

PEMA 2:39

BRP (State of PA) 3:30

DCPA 3:30

HEW (Pickup)

IMMEDIATE
PRELIMINARY NOTIFICATION

IMMEDIATE
PRELIMINARY NOTIFICATION

Sub

April 24, 1979

PRELIMINARY NOTIFICATION OF EVENT OR UNUSUAL OCCURRENCE -- PNO-79-67AE

This preliminary notification constitutes summary information of an event of safety or public interest significance. The information presented is a summary of information as of 7:00 a.m. on April 24, 1979.

Facility: Three Mile Island Unit 2
Middletown, Pennsylvania (DN 50-320)

Subject: NUCLEAR INCIDENT AT THREE MILE ISLAND

Plant Status

The average primary coolant temperature is still being maintained at 175 degrees F by admitting steam directly to the main condenser through the main turbine. The highest incore thermocouple reading is 271 degrees F.

The charcoal filters in Train A of the Fuel Handling Building Ventilation System have been replaced. This train was placed in service at 6:30 a.m. April 24, 1979. Twenty-eight of 90 charcoal filters in Train B of the Auxiliary Building Ventilation System have been replaced.

Environmental Status

One Aerial Measuring System (AMS) Survey was made between 10:15 p.m. and 11:15 p.m. on April 23, 1979. No radioactivity above natural background was detected.

Iodine concentration at Unit 2 ventilation stack (Analyzed by NRC Mobile Laboratory).

<u>Date/Time</u>	<u>Activity (uCi/cc)</u>
4/23 (0007) - 4/23 (0406)+	6.7 x 10 ⁻⁸
4/23 (0407) - 4/23 (0758)	5.9 x 10 ⁻⁸
4/23 (0801) - 4/23 (1201)	3.6 x 10 ⁻⁸⁺⁺
4/23 (1223) - 4/23 (1614)	1.4 x 10 ⁻⁷⁺⁺
4/23 (1617) - 4/23 (2010)	6.3 x 10 ⁻⁸
4/23 (2014) - 4/23 (2156)	5.7 x 10 ⁻⁸
4/23 (2159) - 4/24 (0001)	5.9 x 10 ⁻⁸
4/24 (0004) - 4/24 (0404)	4.9 x 10 ⁻⁸

+ This entry was incorrectly reported in PNO-79-67AD.

++ These are licensee contractor values.

CONTINUED
IMMEDIATE PRELIMINARY NOTIFICATION

Offsite Measurements

Radiation Levels

Offsite radiation levels indentified by NRC survey teams continue to be consistent with normal background levels (0.02 mR/hr maximum). These results were obtained from routine surveys performed downwind on the east side of the Susquehanna River at distances up to five miles north and south of the site.

Dose rates (47 locations) as measured by NRC thermoluminescent dosimeters (TLDs) for the past 24 hour period continue to be consistent with normal background levels.

NRC Environmental Samples (Samples taken offsite within 3 miles of site analyzed in mobile laboratory)

<u>Sample Type</u>	<u>Date of Sample</u>	<u>Number of Samples</u>	<u>Results</u>
air	4/23-24	10	Less than MDA
milk	4/21	4	Less than MDA
daily air	4/22-23	1	Less than MDA

EPA Environmental Samples (Analyzed at Remote Laboratory)

<u>Sample Type</u>	<u>Date of Sample</u>	<u>Number of Samples</u>	<u>Results</u>
air	4/19	26	Less than MDA
air	4/19	5	Range from 2.1 to 6.9 x 10 ⁻¹³ microcuries per cubic centimeter (0.21 to 0.69 picocuries per cubic meter)
air	4/20	5	Range from 9 to 168 picocuries per cubic meter of Xe-133. 14 to 22 picocuries per cubic meter Kr-85.** These are approximately background levels.
milk	4/18	6	Less than MDA
milk	4/19	9	Less than MDA

All EPA samples were taken at distances greater than 2 miles from the site.

*MDA = minimum detectable activity.

**Maximum Permissible Concentration for Xe-133 and Kr-85 is 300,000 picocuries per cubic meter.

The Commonwealth of Pennsylvania has been informed of these results.

CONTINUED
IMMEDIATE PRELIMINARY NOTIFICATION

April 24, 1979
PNO-79-67AE

Contact: RPaulus, IE x27246; DThompson, IE x28487

Distribution: Transmitted H St 1:45
Chairman Hendrie
Commissioner Kennedy
Commissioner Gilinsky

Commissioner Bradford
Commissioner Ahearne

S. J. Chilk, SECY
C. C. Kammerer, CA
(For Distribution)

Transmitted: MNBB 1:55
L. V. Gossick, EDO
H. L. Ornstein, EDO
J. J. Fouchard, PA
N. M. Haller, MPA
R. G. Ryan, OSP
H. K. Shapar, ELD

P. Bldg 2:00
H. R. Denton, NRR
R. C. DeYoung, NRR
R. J. Mattson, NRR
V. Stello, NRR
R. S. Boyd, NRR
SS Bldg 2:04
W. J. Dircks, NMSS
S. Levine, RES

J. G. Davis, IE
Region I 2:26
Region II 2:44
Region III 2:21
Region IV 3:10
Region V 2:59
(MAIL)
J. J. Cummings, OIA
R. Minogue, SD

IE (TMI) Site 4:00 (Provide copy to STATE)
White House Situation Room 2:50 4/25
FDAA 3:20 (Provide copies to the Administrator and the Operations Center)
EPA 8:30 4/25
DOE/EOC 8:40 4/25
PEMA 3:40
BRP (State of PA) 9:15
DCPA 9:40 4/25
HEW (Pickup)

Handcarry (FAA)

IMMEDIATE
PRELIMINARY NOTIFICATION

IMMEDIATE
PRELIMINARY NOTIFICATION

April 25, 1979

PRELIMINARY NOTIFICATION OF EVENT OR UNUSUAL OCCURRENCE -PNO-79-67AF

This preliminary notification constitutes summary information of an event of safety or public interest significance. The information presented is a summary of information as of 7:00 a.m. on April 25, 1979.

Facility: Three Mile Island Unit 2
Middletown, Pennsylvania (DN 50-320)

Subject: NUCLEAR INCIDENT AT THREE MILE ISLAND

Plant Status

In the course of transferring feedwater flow to the auxiliary nozzles, a carryover of water into the steam line was experienced, resulting in water impingement in the main turbine. An operator-initiated turbine trip at about 3:00 p.m. stopped the impingement. The feedwater was being diverted to the auxiliary feedwater sparger in preparation for secondary system modification for adding a closed cooling system. Steam is currently being admitted to the main condenser through the turbine bypass valves. This change in cooling mode will not affect preparations for natural circulation operations. The average primary coolant temperature has increased to 224 degrees F. The highest incore thermocouple reading is 312 degrees F.

As a result of changing the charcoal filters in the A Trains of the Auxiliary and Fuel Handling Building Ventilation Systems, the iodine discharges have been reduced by approximately 80 percent. The charcoal filters of Auxiliary Building Ventilation System Train B have been replaced. This system was placed in service at 5:30 a.m. April 25.

Following a briefing of the Governor's Office, a press briefing was held to outline the anticipated schedule for achieving long term cooling status. A copy of the press release is attached.

Environmental Status

Three Aerial Measuring System (ARMS) Surveys were made on April 24, 1979. No radioactivity above natural background was detected.

CONTINUED
IMMEDIATE PRELIMINARY NOTIFICATION

Iodine concentration at Unit 2 ventilation stack (Analyzed by NRC Mobile Laboratory).

<u>Date/Time</u>	<u>Activity (uCi/cc)</u>
4/24 (0408) - 4/24 (0637)	3.0×10^{-8}
4/24 (0642) - 4/24 (0813)	4.2×10^{-8}
4/24 (0815) - 4/24 (1215)	3.1×10^{-8}
4/24 (1217) - 4/24 (1600)	1.6×10^{-8}
4/24 (1602) - 4/24 (1955)	2.4×10^{-8}
4/24 (1958) - 4/25 (0001)	2.6×10^{-8}

Offsite Measurements

Radiation Levels

Offsite radiation levels identified by NRC survey teams continue to be consistent with natural background levels (0.02 mR/hr maximum). These results were obtained from routine daily surveys performed downwind on the east side of the Susquehanna River at distances up to five miles north and south of the site.

Dose rates (47 locations) as measured by NRC thermoluminescent dosimeters (TLDs) for the past 24 hour period continue to be consistent with natural background levels.

NRC Environmental Samples (Samples taken offsite within 3 miles of site analyzed in mobile laboratory)

<u>Sample Type</u>	<u>Date of Sample</u>	<u>Number of Samples</u>	<u>Results</u>
air	4/24-25	6	Less than MDA*
milk	4/23	3	Less than MDA
daily air	4/23-24	1	Less than MDA

EPA Environmental Samples (Analyzed at Remote Laboratory)

<u>Sample Type</u>	<u>Date of Sample</u>	<u>Number of Samples</u>	<u>Results</u>
air	4/23	28	Less than MDA
air	4/23	3	Range from 2.3 to 7.1×10^{-13} microcuries per cubic centimeter (0.23 to 0.71 picocuries per cubic meter)
air	4/20	2	One sample was less than MDA. One sample indicated 168 picocuries per cubic meter of Xe-133.** Both samples indicated approximate background levels of Kr-85.

April 25, 1979
PNO-79-67AF

All EPA samples were taken at distances greater than 2 miles from this site.

*MDA - minimum detectable activity.

**Maximum Permissible Concentration for Xe-133 is 300,000 picocuries per cubic meter.

The Commonwealth of Pennsylvania has been informed of these results.

Attachment: Press Release Dated 4/24/79

Contact:

Distribution: Transmitted H St 2:45

Chairman Hendrie

Commissioner Bradford

Commissioner Kennedy

Commissioner Ahearne

Commissioner Gilinsky

S. J. Chilk, SECY

C. C. Kammerer, CA

(For Distribution)

Transmitted: MNBB 3:20

L. V. Gossick, EDO

H. L. Ornstein, EDO

J. J. Fouchard, PA

N. M. Haller, MPA

R. G. Ryan, OSP

H. K. Shapar, ELD

* P. Bldg 3:00

H. R. Denton, NRR

R. C. DeYoung, NRR

R. J. Mattson, NRR

V. Stello, NRR

R. S. Boyd, NRR

SS Bldg 3:45

W. J. Dircks, NMSS

S. Levine, RES

J. G. Davis, IE

Region I 3:00

Region II 3:00

Region III 3:00

Region IV 3:00

Region V 3:00

(MAIL)

J. J. Cummings, OIA

R. Minogue, SD

*Broadcast
by
Comm.
Ph. 71:45 AM*

adcast IE (TMI) Site 3:25 (Provide copy to STATE)

White House Situation Room 4:20

FDAA _____ (Provide copies to the Administrator and the Operations Center)

EPA

DOE/EOC 10:00 4/27

PEMA 4:00

BRP (State of PA) _____

DCPA

HEW (Pickup)

Handcarry (FAA)

IMMEDIATE
PRELIMINARY NOTIFICATION

FOR IMMEDIATE RELEASE

April 24, 1979

The NRC staff today announced a timetable for placing the Three Mile Island Unit 2 reactor on natural circulation cooling. As stated on previous occasions, it is now possible to cool the reactor by natural convection circulation if difficulties arise with presently operating equipment. It is, of course, preferable to place the plant on natural circulation in a planned fashion while presently available plant instruments and equipment remain functioning. However, if instrumentation in the plant does not retain its reliability and the various backup methods presently available do not function adequately, it may be necessary to place the plant on natural circulation at that time.

The excessive non-condensable gases in the system have been removed and are now at an acceptable level.

The phased reduction in primary system temperature has now reached approximately 175°F. This reduction in temperature is greater than originally anticipated with steaming in the steam generator A.

Assuming current instrumentation continues to perform satisfactorily, the following timetable for a planned transition to natural circulation has been established. The sequences planned to reach this objective are:

1. The "B" steam generator will be placed in a water solid condition by April 29th.
2. The "A" steam generator will be placed in a water solid condition by April 30th.
3. Action needed to upgrade the backup cooling capability of the existing decay heat removal system will be completed by May 1.
4. With these steps completed, the primary system recirculation pump will be shut off on May 2nd and the system will then go into natural circulation.

There are a number of other ongoing actions at the plant.

1. Radioactive effluent filter systems within the plant have been upgraded. An independent redundant charcoal filter system, which will serve as a second stage of removal, has been under construction for some time. The new system is expected to be operational by May 2nd.

2. Modifications are currently in progress that will permit the secondary side of the "B" steam generator to be operated in a closed system, i.e., without the need for the availability of the main condenser. This activity is scheduled for completion for May 7th. Closed system cooling of steam generator B is not essential to establish stable natural circulation cooling.
3. The "A" steam generator also will be modified to permit operation in a closed system. This modification also is not required to establish natural circulation. Its schedule for completion is currently estimated to be the middle of May.
4. The passive level and pressure control system that will augment existing plant systems is expected to be completed by mid-May. This system is not needed to achieve natural circulation, but it is prudent to add this redundancy to the existing plant equipment for long term monitoring of natural circulation cooling.
5. Modifications on the onsite electrical system are currently being made. Additional diesel generators have been delivered to the site to provide a backup power supply, and are currently being placed on their foundations. Electrical instrumentation and other necessary connections will be completed by April 27th.
6. There are a number of additional modifications being made within the facility that are related to the long term recovery from the accident. Such modifications include: adding an additional decay heat removal system with equipment to process and remove the radioactive materials from the primary coolant system; the installation of additional tanks to provide for storage of contaminated water that may result from decontamination activities; installation of additional contaminated water processing equipment, and general decontamination activities needed in the auxiliary building.

IMMEDIATE
PRELIMINARY NOTIFICATION

April 26, 1979

PRELIMINARY NOTIFICATION OF EVENT OR UNUSUAL OCCURRENCE -- PNO-79-67AG

This preliminary notification constitutes summary information of an event of safety or public interest significance. The information presented is a summary of information as of 7:00 a.m. on April 26, 1979.

Facility: Three Mile Island Unit 2
Middletown, Pennsylvania (DN 50-320)

Subject: NUCLEAR INCIDENT AT THREE MILE ISLAND

Plant Status

The average coolant temperature is being maintained at 225 degrees F by admitting steam to the main condenser through the turbine bypass valves. The highest incore temperature reading is 311 degrees F.

Environmental Status

No Aerial Measuring System (AMS) Surveys were made on April 25, 1979.

Iodine concentration at Unit 2 ventilation stack (analyzed by NRC Mobile Laboratory).

<u>Date/Time</u>	<u>Activity (uCi/cc)</u>
4/25 (0004) - 4/25 (0512)	2.0×10^{-8}
4/25 (0520) - 4/25 (0658)	1.5×10^{-8}
4/25 (0701) - 4/25 (1200)	1.0×10^{-8}
4/25 (1200) - 4/25 (1555)	2.0×10^{-8}
4/25 (1557) - 4/25 (2010)	1.2×10^{-8}
4/25 (2013) - 4/26 (0013)	1.2×10^{-8}

Offsite Measurements

Radiation Levels

Offsite radiation levels identified by NRC survey teams continue to be consistent with natural background levels (0.02 mR/hr maximum). These results were obtained from routine daily surveys performed downwind on the east and west sides of the Susquehanna River at distances up to five miles north and south of the site.

Dose rates (47 locations) as measured by NRC thermoluminescent dosimeters (TLDs) for the past 24 hour period continue to be consistent with natural background levels.

CONTINUED
IMMEDIATE PRELIMINARY NOTIFICATION

NRC Environmental Samples (Samples taken offsite within 3 miles of site - analyzed in mobile laboratory)

<u>Sample Type</u>	<u>Date of Sample</u>	<u>Number of Samples</u>	<u>Results</u>
air	4/25-26	5	Less than MDA*
milk	4/23-25	6	Less than MDA
daily air	4/24-25	1	Less than MDA
grass	4/23-25	5	Less than MDA

EPA Environmental Samples (Analyzed at Remote Laboratory)

<u>Sample Type</u>	<u>Date of Sample</u>	<u>Number of Samples</u>	<u>Results</u>
air	4/24	29	Less than MDA
air	4/24	2	Range from 5.4 to 7.0 x 10 ⁻¹³ microcuries per cubic centimeter (0.54 to 0.70 picocuries per cubic meter)

All EPA samples were taken at distances greater than 2 miles from the site.

*MDA - minimum detectable activity.

The Commonwealth of Pennsylvania has been informed of these results.

Contact: RCPaulus, IE x27246 DThompson, IE x27246

Distribution: Transmitted H St 1:25

Chairman Hendrie	Commissioner Bradford	S. J. Chilk, SECY
Commissioner Kennedy	Commissioner Ahearne	C. C. Kammerer, CA
Commissioner Gilinsky		(For Distribution)
Transmitted: MNBB <u>1:20</u>	P. Bldg <u>1:30</u>	J. G. Davis, IE
L. V. Gossick, EDO	H. R. Denton, NRR	Region I <u>1:40</u>
H. L. Ornstein, EDO	R. C. DeYoung, NRR	Region II <u>1:45</u>
J. J. Fouchard, PA	R. J. Mattson, NRR	Region III <u>1:50</u>
N. M. Haller, MPA	V. Stello, NRR	Region IV <u>2:45</u>
R. G. Ryan, OSP	R. S. Boyd, NRR	Region V <u>2:47</u>
H. K. Shapar, ELD	SS Bldg <u>1:35</u>	(MAIL)
	W. J. Dircks, NMSS	J. J. Cummings, OIA
	S. Levine, RES	R. Minogue, SD

IE (TMI) Site 3:05 (Provide copy to STATE)

White House Situation Room

FDAA (Provide copies to the Administrator and the Operations Center)

EPA

DOE/EOC 10:10 4/27

PEMA

BRP (State of PA) 5:00 p.m.

DCPA

HEW (Dispersal)

Handcarry (FAA)

IMMEDIATE
PRELIMINARY NOTIFICATION

PD

IMMEDIATE
PRELIMINARY NOTIFICATION

April 27 1979

PRELIMINARY NOTIFICATION OF EVENT OR UNUSUAL OCCURRENCE -- PNO-79-67AH

This preliminary notification constitutes summary information of an event of safety or public interest significance. The information presented is a summary of information as of 7:00 a.m. on April 27, 1979.

Facility: Three Mile Island Unit 2
Middletown, Pennsylvania (DN 50-320)

Subject: NUCLEAR INCIDENT AT THREE MILE ISLAND

Plant Status

The average coolant temperature is being maintained at 225 degrees F by admitting steam to the main condenser through the turbine bypass valves. The highest incore temperature reading is 310 degrees F.

Pressurizer level transmitter LT-3 became erratic over the period of 12:30 - 1:30 a.m. on April 27, but is now tracking again. Calibration of the Heise Gauge, to be used as a back-up pressurizer level measurement has been completed.

Environmental Status

No Aerial Measuring System (AMS) Surveys were made on April 26, 1979.

Iodine concentration at Unit 2 ventilation stack (analyzed by NRC Mobile Laboratory).

<u>Date/Time</u>	<u>Activity (uCi/cc)</u>
4/26 (0016) - 4/26 (0357)	1.2×10^{-8}
4/26 (0400) - 4/26 (0800)	1.1×10^{-8}
4/26 (0805) - 4/26 (1220)	1.1×10^{-8}
4/26 (1220) - 4/26 (1558)	7.4×10^{-9}
4/26 (1606) - 4/26 (1913)	1.4×10^{-8}
4/26 (1913) - 4/27 (0006)	1.4×10^{-8}

Offsite Measurements

Radiation Levels

Offsite radiation levels identified by NRC survey teams continue to be consistent with natural background levels (0.02 mR/hr maximum). These results were obtained from routine daily surveys performed downwind on the east and west sides of the Susquehanna River at distances up to five miles north and south of the site.

CONTINUED
IMMEDIATE PRELIMINARY NOTIFICATION

Dose rates (47 locations as measured by NRC thermoluminescent dosimeters (TLDs) for the past 24-hour period continue to be consistent with natural background levels.

NRC Environmental Samples (Samples taken offsite within 3 miles of site - analyzed in mobile laboratory)

<u>Sample Type</u>	<u>Date of Sample</u>	<u>Number of Samples</u>	<u>Results</u>
air	4/26-27	7	Less than MDA*
daily air	4/25-26	1	Less than MDA
rain water	4/26	1	Less than MDA

EPA Environmental Samples (Analyzed at Remote Laboratory)

EPA reported orally that the air samples collected on 4/24 - 4/25 from the 31 sampling stations were all less than MDA for I-131.

All EPA samples were taken at distances greater than 2 miles from the site.

*MDA - minimum detectable activity.

The Commonwealth of Pennsylvania has been informed of these results.

Contact: RCPaulus, IE 27246 DThompson, IE x27246

Distribution: Transmitted H St 12:45p

Chairman Hendrie	Commissioner Bradford	S. J. Chilk, SECY
Commissioner Kennedy	Commissioner Ahearne	C. C. Kammerer, CA
Commissioner Gilinsky		(For Distribution)
Transmitted: MNBB <u>12:45p</u>	P. Bldg <u>3/12</u>	J. G. Davis, IE
L. V. Gossick, EDO	H. R. Denton, NRR	Region I <u>3815</u>
H. L. Ornstein, EDO	R. C. DeYoung, NRR	Region II <u>3125</u>
J. J. Fouchard, PA	R. J. Mattson, NRR	Region III <u>4000</u>
N. M. Haller, MPA	V. Stello, NRR	Region IV <u>4015</u>
R. G. Ryan, OSP	R. S. Boyd, NRR	Region V <u>4150</u>
H. K. Shapar, ELD	SS Bldg <u>12:50p</u>	(MAIL)
	W. J. Dircks, NMSS	J. J. Cummings, OIA
	S. Levine, RES	R. Minogue, SD

IE (TMI) Site 12:51 (Provide copy to STATE)

White House Situation Room 500

+ Xerox FDAA (Provide copies to the Administrator and the Operations Center)

EPA 12:25 (xerox) (6m)

Rep. DOE/EOC

am. Yerox PEMA 443

Radio 3-m BRP (State of PA) 4/27-1:00p.

DCPA 12:25 (1m x 1m)

Yerox HEW

Handcarry (FAA)

Xerox C. Abraham, PA (Middletown Information Center) 2:45p.m.

IMMEDIATE
PRELIMINARY NOTIFICATION

IMMEDIATE
PRELIMINARY NOTIFICATION

April 28, 1979

PRELIMINARY NOTIFICATION OF EVENT OR UNUSUAL OCCURRENCE - PNO-79-67AI

This preliminary notification constitutes summary information of an event of safety or public interest significance. The information presented is a summary of information as of 7:00 a.m. on April 28, 1979.

Facility: Three Mile Island Unit 2
Middletown, Pennsylvania (DN-50-320)

Subject: NUCLEAR INCIDENT AT THREE MILE ISLAND

Plant Status

The average coolant temperature is 179 degrees F. Steam is being admitted to the main condenser through the turbine bypass valves from the A Steam Generator. The highest incore temperature reading is 319 degrees F.

Pressurizer level Lt-3 failed at 9:15 a.m. on April 27. Pressurizer level is now being monitored by the back-up Heise Gauge and a mass balance calculation. Because of the degradation of the level instrumentation natural circulation was initiated ahead of schedule. Reactor Coolant Pump 2A was shut down at 2:08 p.m. on April 27 and natural circulation was established on both Steam Generators.

Increasing levels of radioactivity were noted shortly after the start of steaming the B Steam Generator. Offsite monitoring was conducted and the levels returned to natural background levels within three to four hours.

Steaming of the B Steam Generator was stopped at 1:10 a.m., April 28 due to an indicated increase in the level of ventilation stack activity. This indication was later found to be in error. Natural circulation is continuing on the A Steam Generator.

Environmental Status

Aerial Measuring System (AMS) surveys were conducted from late morning until 6:00 p.m. on April 27. Xe-133 activity was detected up to 10 miles downwind (SSE). Maximum readings were 0.2 mR/hr. No iodine was detected during aerial surveys.

Offsite Measurements

Radiation Levels

Offsite radiation levels indentified by NRC survey teams were consistent with the AMS Survey. Readings from background to 0.35 mR/hr were present in SSE direction from the site.

Dose rates (47 locations as measured by NRC thermoluminescent dosimeters (TLDs) for the past 24 hour period continue to be consistent with natural background levels.

CONTINUED
IMMEDIATE PRELIMINARY NOTIFICATION

NRC Environmental Samples (Samples taken offsite within 3 miles of site analyzed in mobile laboratory)

<u>Sample Type</u>	<u>Date of Sample</u>	<u>Number of Samples</u>	<u>Results</u>
air	4/27	17	Less than MDA*
daily air	4/26-27	1	Less than MDA

EPA Environmental Samples (Analyzed at Remote Laboratory)

<u>Sample Type</u>	<u>Date of Sample</u>	<u>Number of Samples</u>	<u>Results</u>
air	4/25-26	5	Less than MDA
air	4/25-26	1	3.4×10^{-13} microcuries per cubic centimeter (0.34 picocuries per cubic meter) I-131
discharge water	4/21-26	7	Less than MDA

All EPA samples were taken at distances greater than 2 miles from the site

*MDA - minimum detectable activity.

EPA provided spike milk samples on 4/27/79 for interlab comparison of analytical methods by each agency performing milk analysis.

The Commonwealth of Pennsylvania has been informed of these results.

Contact:

Distribution: Transmitted H St _____

Chairman Hendrie	Commissioner Bradford	S. J. Chilk, SECY
Commissioner Kennedy	Commissioner Ahearne	C. C. Kammerer, CA
Commissioner Gilinsky		(For Distribution)
Transmitted: MNBB _____	P. Bldg _____	J. G. Davis, IE
L. V. Gossick, EDO _____	H. R. Denton, NRR	Region I _____
H. L. Ornstein, EDO	R. C. DeYoung, NRR	Region II _____
J. J. Fouchard, PA	R. J. Mattson, NRR	Region III _____
N. M. Haller, MPA	V. Stello, NRR	Region IV _____
R. G. Ryan, OSP	R. S. Boyd, NRR	Region V _____
H. K. Shapar, ELD	SS Bldg _____	(MAIL)
	W. J. Dircks, NMSS	J. J. Cummings, OIA
	S. Levine, RES	R. Minogue, SD

IE (TMI) Site _____ (Provide copy to STATE)

C. Abraham, PA _____ (Middletown - TMI- Information Center)

White House Situation Room _____

FDAA _____ (Provide copies to the Administrator and the Operations Center)

EPA _____

DOE/EOC _____

PEMA _____

BRP (State of PA) _____

DCPA _____

HEW _____

Handcarry (FAA) _____

IMMEDIATE
PRELIMINARY NOTIFICATION

98

IMMEDIATE
PRELIMINARY NOTIFICATION

April 29, 1979

PRELIMINARY NOTIFICATION OF EVENT OR UNUSUAL OCCURRENCE -- PNO-79-67AJ

This preliminary notification constitutes summary information of an event of safety or public interest significance. The information presented is a summary of information as of 7:00 a.m. on April 29, 1979.

Facility: Three Mile Island Unit 2
Middletown, Pennsylvania (DN 50-320)

Subject: NUCLEAR INCIDENT AT THREE MILE ISLAND

Plant Status

The average coolant temperature is 175 degrees F. Steam is being admitted to the main condenser through the turbine bypass valves from the A Steam Generator. The highest incore temperature reading is 320 degrees F. Natural circulation is continuing on the A Steam Generator.

Environmental Status

Two Aerial Measuring System (AMS) Surveys were made on April 28, 1979. No radioactivity above natural background was detected.

Iodine concentration at Unit 2 ventilation stack (Analyzed by NRC Mobile Laboratory).

<u>Date/Time</u>	<u>Activity (uCi/cc)</u>
4/27 (0011) - 4/28 (0038)	1.11×10^{-8}
4/28 (0042) - 4/28 (0830)	3.35×10^{-9}
4/28 (0832) - 4/28 (1625)	9.51×10^{-9}

Offsite Measurements

Radiation Levels

Offsite radiation levels identified by NRC survey teams continue to be consistent with natural background levels (0.02 mR/hr maximum). These results were obtained from routine daily surveys performed downwind on the east and west sides of the Susquehanna River at distances up to five miles north and south of the site.

Dose rates (47 locations) as measured by NRC thermoluminescent dosimeters (TLDs) for the past 24 hour period continue to be consistent with natural background levels.

CONTINUED
IMMEDIATE PRELIMINARY NOTIFICATION

NRC Environmental Samples (Samples taken offsite within 3 miles of site analyzed in mobile laboratory)

<u>Sample Type</u>	<u>Date of Sample</u>	<u>Number of Samples</u>	<u>Results</u>
air	4/28	9	Less than MDA*
daily air	4/28-29	1	Less than MDA

EPA Environmental Samples (Analyzed at Remote Laboratory)

No Sample Results Reported.

*MDA - minimum detectable activity.

The Commonwealth of Pennsylvania has been informed of these results.

Contact: DChapell, IE x28080; DThompson, IE x 28487

Distribution: Transmitted H St 11:20a.

Chairman Hendrie	Commissioner Bradford	S. J. Chilk, SECY
Commissioner Kennedy	Commissioner Ahearne	C. C. Kammerer, CA
Commissioner Gilinsky		(For Distribution)
Transmitted: MNBB <u>11:21a.</u>	P. Bldg <u>11:23a</u>	J. G. Davis, IE
L. V. Gossick, EDO	H. R. Denton, NRR	Region I <u>11:27a.</u>
H. L. Ornstein, EDO	R. C. DeYoung, NRR	Region II <u>11:30a.</u>
J. J. Fouchard, PA	R. J. Mattson, NRR	Region III <u>11:33a.</u>
N. M. Haller, MPA	V. Stello, NRR	Region IV <u>11:35a.</u>
R. G. Ryan, OSP	R. S. Boyd, NRR	Region V <u>11:36a.</u>
H. K. Shapar, ELD	SS Bldg <u>11:25</u>	(MAIL)
	W. J. Dircks, NMSS	J. J. Cummings, OIA
	S. Levine, RES	R. Minogue, SD

IE (TMI) Site 11:40a. (Provide copy to STATE)

C. Abraham, PA 11:46a. (Middletown - TMI- Information Center)

White House Situation Room 1:00p.m.

FDAA 12:00 Noon (Provide copies to the Administrator and the Operations Center)

EPA 12:10p.

DOE/EOC 12:50

PEMA 12:20p.

BRP (State of PA) 12:50

DCPA 12:50

HEW 7:00 a.m.

Handcarry (FAA)

IMMEDIATE
PRELIMINARY NOTIFICATION

70

IMMEDIATE
PRELIMINARY NOTIFICATION

April 30, 1979

PRELIMINARY NOTIFICATION OF EVENT OR UNUSUAL OCCURRENCE -- PNO-79-67AK

This preliminary notification constitutes summary information of an event of safety or public interest significance. The information presented is a summary of information as of 7:00 a.m. on April 30, 1979.

Facility: Three Mile Island Unit 2
Middletown, Pennsylvania (DN 50-320)

Subject: NUCLEAR INCIDENT AT THREE MILE ISLAND

Plant Status

The average coolant temperature is being maintained at 175 degrees F by natural circulation. Steam is being admitted to the main condenser through the turbine bypass valves from the A Steam Generator. The highest incore temperature reading is 323 degrees F.

Environmental Status

One Aerial Measuring System (AMS) Survey was made on April 29, 1979. No radioactivity above natural background was detected.

Iodine concentration at Unit 2 ventilation stack for the 24 hour period ending at 12:25 a.m. April 29 was 8.21×10^{-9} microcuries per cubic centimeter (Analyzed by NRC Mobile Laboratory).

An NRC survey of the site perimeter was conducted on April 29. Radiation levels were in the range of 0.02 - 0.03 mR/hr.

Offsite Measurements

Radiation Levels

Offsite radiation levels identified by NRC survey teams continue to be consistent with natural background levels (0.02 mR/hr maximum). These results were obtained from routine daily surveys performed downwind on the east and west sides of the Susquehanna River at distances up to five miles north and south of the site.

Dose rates (47 locations) as measured by NRC thermoluminescent dosimeters (TLDs) for the past 24 hour period continue to be consistent with natural background levels.

CONTINUED
IMMEDIATE PRELIMINARY NOTIFICATION

NRC Environmental Samples (Samples taken offsite within 3 miles of site analyzed in mobile laboratory)

<u>Sample Type</u>	<u>Date of Sample</u>	<u>Number of Samples</u>	<u>Results</u>
air	4/29	4	Less than MDA*
daily air	4/28-29	1	Less than MDA
milk	4/29	3	Less than MDA
discharge water	4/29	34	Less than MDA
vegetation	4/29	1	2.7 x 10 ⁻⁴ microcuries/ square meter

EPA Environmental Samples (Analyzed at Remote Laboratory)

No Sample Results Reported.

The Commonwealth of Pennsylvania has been informed of these results.

*MDA - minimum detectable activity.

Contact: RCPaulus, IE x27246 DThompson, IE x28487

Distribution: Transmitted H St 10:40

Chairman Hendrie	Commissioner Bradford	S. J. Chilk, SECY
Commissioner Kennedy	Commissioner Ahearne	C. C. Kammerer, CA
Commissioner Gilinsky		(For Distribution)
Transmitted: MNBB <u>10:45</u>	P. Bldg <u>10:50 11:32</u>	J. G. Davis, IE
L. V. Gossick, EDO	H. R. Denton, NRR	Region I <u>11:35</u>
H. L. Ornstein, EDO	R. C. DeYoung, NRR	Region II <u>11:05</u>
J. J. Fouchard, PA	R. J. Mattson, NRR	Region III <u>11:10</u>
N. M. Haller, MPA	V. Stello, NRR	Region IV <u>11:</u>
R. G. Ryan, OSP	R. S. Boyd, NRR	Region V <u>11:15</u>
H. K. Shapar, ELD	SS Bldg <u>10:50 11:00</u>	(MAIL)
	W. J. Dircks, NMSS	J. J. Cummings, OIA
	S. Levine, RES	R. Minogue, SD

IE (TMI) Site 11:26 (Provide copy to STATE)

C. Abraham, PA 1:18 (Middletown - TMI-Information Center)

White House Situation Room 1:45

FDAA 11:40 (Provide copies to the Administrator and the Operations Center)

EPA 12:17

DOE/EOC 11:29

PEMA 2:34

BRP (State of PA) 3:45

DCPA 4:00

HEW 1:30 (Pick up)

Handcarry (FAA)

IMMEDIATE
PRELIMINARY NOTIFICATION

7

IMMEDIATE
PRELIMINARY NOTIFICATION

May 1, 1979

PRELIMINARY NOTIFICATION OF EVENT OR UNUSUAL OCCURRENCE -- PNO-79-67AL

This preliminary notification constitutes summary information of an event of safety or public interest significance. The information presented is a summary of information as of 7:00 a.m. on May 1, 1979.

Facility: Three Mile Island Unit 2
Middletown, Pennsylvania (DN 50-320)

Subject: NUCLEAR INCIDENT AT THREE MILE ISLAND

Plant Status

The average coolant temperature is being maintained at 175 degrees F by natural circulation. Steam is being admitted to the main condenser through the turbine bypass valves from the A Steam Generator. The highest incore temperature reading is 326 degrees F.

Environmental Status

One Aerial Measuring System (AMS) Survey was made on April 30, 1979. No radioactivity above natural background was detected.

Iodine concentration at Unit 2 ventilation stack for the 24 hour period ending at 12:08 a.m., April 30 was 1.5×10^{-8} microcuries per cubic centimeter (Analyzed by NRC Mobile Laboratory).

Offsite Measurements

Radiation Levels

Offsite radiation levels identified by NRC survey teams continue to be consistent with natural background levels (0.02 mR/hr maximum). These results were obtained from routine daily surveys performed downwind on the east and west sides of the Susquehanna River at distances up to five miles north and south of the site.

Dose rates (47 locations) as measured by NRC thermoluminescent dosimeters (TLDs) for the past 24 hour period continue to be consistent with natural background levels.

CONTINUED
IMMEDIATE PRELIMINARY NOTIFICATION

NRC Environmental Samples (Samples taken offsite within 3 miles of site analyzed in mobile laboratory)

<u>Sample Type</u>	<u>Date of Sample</u>	<u>Number of Samples</u>	<u>Results</u>
air	4/30	4	Less than MDA*
daily air	4/29-30	1	Less than MDA
cow's milk	4/28	1	Less than MDA
discharge water	4/30	1	Less than MDA
vegetation	4/30	3	Less than MDA
goat's milk	4/30	1	3.19×10^{-8} uCi/ml

EPA Environmental Samples (Analyzed at Remote Laboratory)

<u>Sample Type</u>	<u>Date Collected</u>	<u>Number</u>	<u>Results</u>
Air Iodine	4/23 4/24	25 7	Two samples had detectable I-131 (Highest at 1.0 picocuries per cubic meter) - (Less than MDA on all others)
Milk	4/23, 24, 25	18	Less than MDA for I-131
Noble gases	4/26, 27, 28	6	Xe-133 level from 10 to 958 picocuries per cubic meter. The highest was collected on 4/26-4/28 5.3 mi @ 145°. Kr-85 was within the range of normal Kr-85 background.)
Water	4/22-4/27	3	Less than MDA.
Air Iodines	4/28 4/29	31 4	Less than MDA. 2 were less than MDA, two showed I-131 at 0.38 and 0.48 picocuries per cubic meter.

No other agency data received.

The Commonwealth of Pennsylvania has been informed of these results.

*MDA - minimum detectable activity.

Correction

PNO-79-67AK, 4/30/79, reported 34 discharge water samples collected on 4/29/79. It should have read 4.

CONTINUED
IMMEDIATE PRELIMINARY NOTIFICATION

IMPORTANT NOTE - FUTURE PN'S

This is the last daily update of information on the Three Mile Island incident. Henceforth, updates will be issued each Monday. Significant information, however, will be reported immediately in a Preliminary Notification.

Contact: RCPaulus, IE x27246 DThompson, IE x28487

Distribution: Transmitted H St 1:55

Chairman Hendrie
Commissioner Kennedy
Commissioner Gilinsky

Commissioner Bradford
Commissioner Ahearne

S. J. Chilk, SECY
C. C. Kammerer, CA
(For Distribution)

Transmitted: MNBB 1:58
L. V. Gossick, EDO
H. L. Ornstein, EDO
J. J. Fouchard, PA
N. M. Haller, MPA
R. G. Ryan, OSP
H. K. Shapar, ELD

P. Bldg 2:05
H. R. Denton, NRR
R. C. DeYoung, NRR
R. J. Mattson, NRR
V. Stello, NRR
R. S. Boyd, NRR
SS Bldg 2:09
W. J. Dircks, NMSS
S. Levine, RES

J. G. Davis, IE
Region I 2:15
Region II 3:40
Region III 2:30
Region IV 3:50
Region V 3:55
(MAIL)
J. J. Cummings, OIA
R. Minogue, SD

IE (TMI) Site 2:53 (Provide copy to STATE)

C. Abraham, PA 2:20 (Middletown - TMI-Information Center)

White House Situation Room 3:10

FDAA 3:20 (Provide copies to the Administrator and the Operations Center)

EPA 4:15

DOE/EOC 4:08

PEMA 3:40

BRP (State of PA) 4:40

DCPA 4:50

HEW 3:50

Handcarry (FAA)

IMMEDIATE
PRELIMINARY NOTIFICATION

Qu

IMMEDIATE
PRELIMINARY NOTIFICATION

May 7 1979

PRELIMINARY NOTIFICATION OF AN EVENT OR UNUSUAL OCCURRENCE - PNO-79-67AM

This preliminary notification provides updated information of safety or public interest significance.

Facility: Three Mile Island Unit 2
Middletown, Pennsylvania

Subject: NUCLEAR INCIDENT AT THREE MILE ISLAND

Operational Status:

1. Three of four trains of an independent, additional charcoal filter system are presently in operation. Iodine concentrations in the gaseous effluent are consistently below continuous release limits and below normally detectable levels most of the time.
2. Hydrostatic testing of the existing decay heat removal system ("B" loop) is in progress.
3. The pressurizer has been taken "solid" to demonstrate continued decay heat removal capability with the primary coolant system completely filled and to obtain confirmatory information on pressurizer level.
4. Measurement of the liquid level inside containment is planned in the near future by measuring the hydrostatic head on the sump discharge piping using a recently installed Heise gage.
5. A measurement was made of the radioactivity inside the containment building. It indicates that the present dose level from gases within the building is about 100 R/hr. Other radiation sources such as activity deposited on the containment walls and water on the reactor building floor also contribute to the dose levels in the containment but cannot be directly estimated at this time.

Environmental Status

Environmental radiation levels continue to be consistent with natural background levels. Approximately thirteen minor releases have occurred during the past week (May 1-6) in conjunction with venting of the primary make-up tank. Aerial and ground surveys taken during these releases indicated radiation levels at background, except for the periods 2000-2100 hrs on 5/1, 1500-2000 hrs on 5/3, and 0700-0800 hrs on 5/4, when aerial measurements reported I-131 at MDA levels and ground survey readings were 0.034 to 0.04 mr/hr. During the period May 1-6, approximately 37 air samples were collected and all were less than MDA. Vegetation samples collected following the releases were all less than MDA. EPA air and water samples collected during the period April 26 to May 3 showed no evidence of fission products (0.1-0.2 picocuries per cubic meter I-131 for air, and 130 picocuries per liter I-131 for water).

CONTINUED
IMMEDIATE PRELIMINARY NOTIFICATION

May 7, 1979
PNO-79-67AM

Contact: RCPaulus, IE x27246; DThompson, IE, x28487

Distribution: Transmitted H St ~~11:50~~
Chairman Hendrie Commissioner Bradford S. J. Chilk, SECY
Commissioner Kennedy Commissioner Ahearne C. C. Kammerer, CA
Commissioner Gilinsky 11:45 (For Distribution)
Transmitted: MNBB ~~11:20~~ 11:50 J. G. Davis, IE
L. V. Gossick, EDO P. Bldg 11:20 Region I ~~11:25~~ 11:47
H. L. Ornstein, EDO H. R. Denton, NRR Region II 11:25
J. J. Fouchard, PA R. C. DeYoung, NRR Region III 11:30
N. M. Haller, MPA V. Stello, NRR Region IV 11:33
R. G. Ryan, OSP R. S. Boyd, NRR Region V 11:35
H. K. Shapar, ELD SS Bldg 11:40 (MAIL)
W. J. Dircks, NMSS J. J. Cummings, OIA
S. Levine, RES R. Minogue, SD
IE (TMI) Site ~~11:55~~ 4:10 (Provide copy to STATE)
C. Abraham, PA 11:55 (Middletown - TMI- Information Center)
White House Situation Room 2:05
FDAA 4:22 (Provide copies to the Administrator and the Operations Center)
EPA 2:20
DOE/EOC 12:30 5/8
PEMA 2:35
BRP (State of PA) 9:45 5/8
DCPA 12:00 5/8
HEW 12:15 5/8
Handcarry (FAA)

IMMEDIATE
PRELIMINARY NOTIFICATION

IMMEDIATE
PRELIMINARY NOTIFICATION

May 14, 1979

PRELIMINARY NOTIFICATION OF EVENT OR UNUSUAL OCCURRENCE -- PNO-79-67AN (Corrected)

This preliminary notification constitutes summary information of an event of safety or public interest significance.

Facility: Three Mile Island Unit 2
Middletown, Pennsylvania (DN 50-320)

Subject: NUCLEAR INCIDENT AT THREE MILE ISLAND

Operational Status

1. The average coolant temperature is being maintained at 170 degrees F by natural circulation. Pressure is about 650 psi. Steam is being admitted to the main condenser through the turbine bypass valves from the A Steam Generator. The highest incore temperature reading is 308 degrees F.
2. All four trains of the independent, additional charcoal filter system are presently operable. Normally three trains are operating at any one time to provide additional filtration for the entire gaseous effluent flow from Unit 2. Iodine concentrations in the gaseous effluent have been below instantaneous release limits and below detectable levels most of the time.
3. Preliminary hydrostatic testing of the existing decay heat removal system ("A" and "B" loops) has been performed. Leaks have been identified and are being corrected.
4. The pressurizer has been taken "solid" periodically to obtain confirmatory information on pressurizer level and to check primary system leak rate.
5. Measurements of the liquid level inside containment is planned in the near future by measuring the hydrostatic head on the sump discharge piping using a recently installed Heise gage.

Environmental Status

Environmental radiation levels continue to be consistent with natural background levels. There were approximately four minor releases during the past week (May 7-13, 1979) associated with venting of the primary makeup tank and work on the new filter train system and monitors. During this period 14 24-hour continuous air samples and 27 air grab (1 to 2 hr.) samples were collected, and all were less than MDA. A goat milk sample taken on May 8, 1979 contained an I-131 concentration of 12 pCi/liter. The latest goat milk sample collected and analyzed on May 13 showed less than MDA for I-131 (F10 pCi/l). Grass samples taken at the goat farm showed I-131 levels less than MDA. Cow milk samples and grass samples from other locations show less than MDA levels for I-131. Ground surveys continued to show radiation to be at background levels. Aerial surveillance flights have not shown any levels of I-131 above MDA. Other Federal Agencies have not reported any positive values for samples taken during this period.

CONTINUED
IMMEDIATE PRELIMINARY NOTIFICATION

Contact: RCPaulus, IE x27246; DThompson, IE x28487

Distribution: Transmitted H-St 4:05

Chairman Hendrie

Commissioner Kennedy

Commissioner Gilinsky

Transmitted: MNBB 4:16

L. V. Gossick, EDO

H. L. Ornstein, EDO

J. J. Fouchard, PA

N. M. Haller, MPA

R. G. Ryan, OSP

H. K. Shapar, ELD

Commissioner Bradford

Commissioner Ahearne

ACRS

P. Bldg 4:10

H. R. Denton, NRR

R. C. DeYoung, NRR

R. J. Mattson, NRR

V. Stello, NRR

R. S. Boyd, NRR

SS Bldg 4:20

W. J. Dircks, NMSS

S. Levine, RES

S. J. Chilk, SECY

C. C. Kammerer, CA

(For Distribution)

J. G. Davis, IE

Region I 4:20 4:35

Region II 4:25

Region III 4:20

Region IV 4:38

Region V 4:45

(MAIL)

J. J. Cummings, OIA

R. Minogue, SD

IE (TMI) Site 3:40 5/15 (Provide copy to STATE)

C. Abraham, PA (Middletown - TMI- Information Center)

White House Situation Room 9:08 5/15

FDA 9:30 5/15 (Provide copies to the Administrator and the Operations Center)

EPA 9:35 5/15

DOE/EOC 9:45 5/15

PEMA 9:40 5/15

BRP (State of PA) 9:40 5/15

DCPA 9:58 5/15

HEW 3:00 5/15

Handcarry (FAA)

IMMEDIATE
PRELIMINARY NOTIFICATION

BIB

IMMEDIATE
PRELIMINARY NOTIFICATION

May 21, 1979

PRELIMINARY NOTIFICATION OF EVENT OR UNUSUAL OCCURRENCE -- PNO-79-67A0

This preliminary notification constitutes summary information of an event of safety or public interest significance. The information presented is a summary of information as of 7:00 a.m. on May 21, 1979.

Facility: Three Mile Island Unit 2
Middletown, Pennsylvania (DN 50-320)

Subject: NUCLEAR INCIDENT AT THREE MILE ISLAND

Plant Status

Operational:

1. The average coolant temperature is being maintained at 170 degrees F by natural circulation. Pressure is about 300 psi. Steam is being admitted to the main condenser through the turbine bypass valves from the A Steam Generator. The highest incore temperature reading is 301 degrees F.
2. Hydrostatic testing of the existing decay heat removal system "B" loop has been performed satisfactorily. Leaks have been identified and are being corrected in the "A" loop.
3. The pressurizer has been taken "solid" periodically to obtain confirmatory information on pressurizer level and to check primary system leak rate.
4. The water level in the reactor building was measured and found to be 6.1' above floor level. This is about 450,000 gallons.
5. One of two primary system pressure indications now in use is giving erratic readings. Direct reading pressure gages can be connected to the system if needed.

Environmental Status

Environmental radiation levels continue to be consistent with natural background levels. Approximately six minor releases have occurred during the past week (May 14-20) in conjunction with changing levels in the primary make-up tank and sampling the primary system. Aerial and ground surveys taken during these releases indicated no radiation levels above background, except for a release at 1300 on May 16, when an aerial measurement above the stack read 0.05 mR/hr. No radiation was detected on the ground. During the period May 14-20, approximately 36 air samples were collected and all were less than MDA. Vegetation and milk samples collected during this period also showed no activity above MDA. EPA and FDA air, water milk and food samples collected during this past week up to May 19 showed no detectable activity from TMI.

CONTINUED

May 21, 1979
PNO-79-67A0

Contact: RCPaulus, IE x27246 DThompson, IE x28487

Distribution: Transmitted H St 11:04
Chairman Hendrie Commissioner Bradford
Commissioner Kennedy Commissioner Ahearne
Commissioner Gilinsky ACRS

S. J. Chilk, SECY
C. C. Kammerer, CA
(For Distribution)

Transmitted: MNBB 4:40
2:35

L. V. Gossick, EDO
H. L. Ornstein, EDO
J. J. Fouchard, PA
N. M. Haller, MPA
R. G. Ryan, OSP
H. K. Shapar, ELD

P. Bldg 11:00
H. R. Denton, NRR
R. C. DeYoung, NRR
R. J. Mattson, NRR
V. Stello, NRR
R. S. Boyd, NRR
SS Bldg 2:00
W. J. Dircks, NMSS
S. Levine, RES

J. G. Davis, IE
Region I 11:06 11:15
Region II 11:10
Region III 11:55
Region IV 12:10
Region V 12:00
(MAIL)
J. J. Cummings, OIA
R. Minogue, SD

IE (TMI) Site 9:30 5/22 (Provide copy to STATE)
C. Abraham, PA (Middletown - TMI-Information Center)
White House Situation Room 9:35 5/22
FDAA 9:55 5/22 (Provide copies to the Administrator and the Operations Center)
EPA 10:35 5/22
DOE/EOC 4:15
PEMA 10:00 5/22
BRP (State of PA) 10:25 5/22
DCPA 9:45 5/22
HEW 3:00 PM
Handcarry (FAA)

IMMEDIATE
PRELIMINARY NOTIFICATION

DUB

IMMEDIATE
PRELIMINARY NOTIFICATION

May 22, 1979

PRELIMINARY NOTIFICATION OF EVENT OR UNUSUAL OCCURRENCE -- PNO-79-67AP

This preliminary notification constitutes summary information of an event of safety or public interest significance. The information presented is a summary of information as of 7:00 a.m. on May 22, 1979.

Facility: Three Mile Island Unit 2
Middletown, Pennsylvania (DN 50-320)

Subject: NUCLEAR INCIDENT AT THREE MILE ISLAND - REPORTED DEATHS OF COWS

Newspaper, television and radio stories this past weekend have reported that a number of cows have died in a herd near TMI at the Hoover Farm in Bainbridge, Pennsylvania. The article in the Harrisburg Sunday Patriot News reported that the owner of the herd believed the deaths were caused by the accident at TMI. The deaths all involved cows giving birth. Twelve calves have been stillborn and 7 cows have died after giving birth. The article stated that the state lab and the Hershey Medical Center have conducted post mortems and other tests on the dead animals. The symptoms common to all the deaths were intrauterine infections and anemia.

On Sunday afternoon, May 20, 1979, an NRC survey team accompanied by an EPA representative went to the Hoover Farm located about six miles southeast of the plant. Mr. Hoover and his wife stated that they suspect the cows died from leukemia caused by the radiation from TMI. They stated that they never had this problem in the past. They also stated that they knew of two other farmers that were having similar problems. The initial death occurred on April 5. The survey team took samples of feed, grass, soil, well water and milk for radiological analysis. The EPA representative also collected samples.

The Pennsylvania State Department of Agriculture has veterinarians looking into the problem. They are investigating the possibility that a virus infection is the cause of the deaths and that, if so, in a few days they will have identified the virus. The State Bureau of Radiological Health will make a radiological examination of the internal organs of one cow. Another State Agency will examine them for heavy metals. The FDA has sent a veterinarian from the Philadelphia regional office to examine the herds involved.

CONTINUED

Contact: EDFlack, IE 28188 LJCunningham, IE x28188 LBHigginbotham, IE x28188

Distribution: Transmitted H St 11:05

Chairman Hendrie
Commissioner Kennedy
Commissioner Gilinsky

Commissioner Bradford
Commissioner Ahearne
ACRS

S. J. Chilk, SECY
C. C. Kammerer, CA
(For Distribution)

Transmitted: MNBB 11:20

L. V. Gossick, EDO
H. L. Ornstein, EDO
J. J. Fouchard, PA
M. Haller, MPA
R. G. Ryan, OSP
H. K. Shapar, ELD

P. Bldg 11:52
H. R. Denton, NRR
R. C. DeYoung, NRR
R. J. Mattson, NRR
V. Stello, NRR
R. S. Boyd, NRR
SS Bldg 11:10
W. J. Dircks, NMSS
S. Levine, RES

J. G. Davis, IE
Region I 11:35
Region II 12:00
Region III 11:15 N.
Region IV 12:03
Region V 11:48
(MAIL)
J. J. Cummings, OIA
R. Minogue, SD

IE (TMI) Site 11:45 (Provide copy to STATE)

C. Abraham, PA (Middletown - TMI-Information Center)

White House Situation Room 1:20

FDAA 2:45 (Provide copies to the Administrator and the Operations Center)

EPA 2:50

DOE/EOC 3:55

PEMA 4:00

BRP (State of PA) 4:05

DCPA 9:45 5/23

HEW

Handcarry (FAA)

IMMEDIATE
PRELIMINARY NOTIFICATION

215

IMMEDIATE
PRELIMINARY NOTIFICATION

May 29, 1979

PRELIMINARY NOTIFICATION OF AN EVENT OR UNUSUAL OCCURRENCE -- PNO-79-67AQ

This preliminary notification provides updated information of safety or public interest significance.

Facility: Three Mile Island Unit 2
Middletown, Pennsylvania (DN 50-320)

Subject: NUCLEAR INCIDENT AT THREE MILE ISLAND

Operational:

1. The average coolant temperature is 158 degrees F and being maintained around that temperature by natural circulation. Pressure is about 450 psi with the pressurizer in solid operation. Steam is being admitted to the main condenser through the turbine bypass valve from the A Steam Generator. The highest incore temperature reading is 291°F.
2. Water level in the reactor building is being measured daily, and was 6.8 feet above floor level this morning. The lowest decay heat system motor-operated valve (DH-V2) in the reactor building was opened on May 25 as a precautionary measure, due to increasing water level. Secondary sources of water into the reactor building have since been isolated, including the fan coolers water supply, to reduce water in-leakage.
3. Preoperational testing is in progress for the Spent Fuel Pool Tank Farm, Once-Through Steam Generator "B" Long-Term Cooling System, and the modified rad waste treatment system (EPICOR). The testing is scheduled for completion by June 1.

Environmental Status

Environmental radiation levels continue to be consistent with natural background levels. A slight change in background level on May 24 and 25 was shown to be due to changing levels of naturally occurring Rn-222 caused by a weather front moving through the area. Airborne releases have been below Technical Specification limits. During the period May 21-28, approximately 35 air samples were collected by the NRC and all were less than MDA. Vegetation and milk samples collected during this period also showed no activity above MDA. EPA air, water and milk samples collected during this past week up to May 24 showed no detectable activity from TMI.

The State of New Jersey reported that they detected no I-131 in any of the 83 milk samples they analyzed between March 29, 1979 and April 24, 1979. These samples included milk from counties within 50 miles of Harrisburg, Pennsylvania and supplied to New Jersey consumers, the Salem, New Jersey area, and northern New Jersey farms.

CONTINUED

May 29, 1979
PNO-79-67AQ

Analyses have been completed on samples of milk, water, soil, feed and grass collected at the Claire Hoover farm on May 20, 1979 (Reference PNO-79-67AP). No reactor related radionuclides were detected by either the EPA or NRC.

Contact: RCPaulus, IE x27246 DThompson, IE x28487

Distribution: Transmitted H St ~~3:55~~
Chairman Hendrie Commissioner Bradford
Commissioner Kennedy Commissioner Ahearne
Commissioner Gilinsky ACRS

S. J. Chilk, SECY
C. C. Kammerer, CA
(For Distribution)

Transmitted: MNBB ~~3:55~~
L. V. Gossick, EDO
H. L. Ornstein, EDO
J. J. Fouchard, PA
N. M. Haller, MPA
R. G. Ryan, OSP
H. K. Shapar, ELD

P. Bldg ~~10:00~~
H. R. Denton, NRR
R. C. DeYoung, NRR
R. J. Mattson, NRR
V. Stello, NRR
R. S. Boyd, NRR
SS Bldg ~~4:55~~
W. J. Dircks, NMSS
S. Levine, RES

J. G. Davis, IE
Region I ~~10:52~~ 5/30
Region II ~~10:45~~ 5/30
Region III ~~10:49~~ 5/30
Region IV ~~12:26~~ 5/30
Region V ~~10:55~~ 5/30
(MAIL)
J. J. Cummings, OIA
R. Minogue, SD

IE (TMI) Site ~~9:20~~ 5/30 (Provide copy to STATE)
C. Abraham, PA (Middletown - TMI-Information Center)
White House Situation Room ~~12:15~~ 5/30
FDAA ~~1:34~~ 5/30 (Provide copies to the Administrator and the Operations Center)
EPA ~~2:30~~ 5/30
DOE/EOC ~~1:20~~ 5/30
PEMA ~~1:50~~ 5/30
BRP (State of PA) ~~2:45~~ 5/30
DCPA ~~3:15~~
HEW ~~2:00~~ 5/30
Handcarry (FAA)

IMMEDIATE
PRELIMINARY NOTIFICATION

From: Droggitis, Spiros
Sent: Tuesday, March 22, 2011 4:55 PM
To: Weil, Jenny
Subject: RE: NRC EP rules and authority

Yes, quite good. What we expected...

From: Weil, Jenny
Sent: Tuesday, March 22, 2011 4:53 PM
To: Droggitis, Spiros
Subject: Re: NRC EP rules and authority

This is good stuff. Thanks again!

Sent via BlackBerry
Jenny Weil
Congressional Affairs Officer
U.S. Nuclear Regulatory Commission
202-510-8694

From: Droggitis, Spiros
To: Weil, Jenny
Sent: Tue Mar 22 16:46:52 2011
Subject: FW: NRC EP rules and authority

From: Benowitz, Howard
Sent: Tuesday, March 22, 2011 4:43 PM
To: Droggitis, Spiros
Subject: NRC EP rules and authority

Spiros:

Attached is a PDF of the 1980 Federal Register notice of the final rule amending the NRC's emergency preparedness regulations following TMI.

The attached final rule FRN (on page 55406) explains the separation of authorities between the NRC and FEMA, based on President Carter's December 7, 1979, directive (which can be found in NUREG-0980, Vol. 1), and the subsequent identification of each agency's responsibilities through an MOU. The most recent version of this MOU is attached hereto. (The MOU, at page 613, second column, includes this relevant sentence: "While the Atomic Energy Act does not specifically require emergency plans and related preparedness measures, the NRC requires consideration of overall emergency preparedness as a part of the licensing process.")

The quote in Kathy Dedrick's email contains two distinct authorities: "statutory responsibility for the radiological health and safety of the public" and "overall authority for both onsite and offsite emergency

DM/12

preparedness." The first authority comes from the AEA. The second authority is detailed in the MOU with FEMA and in 10 CFR 50.47(a)(2).

Before issuing a license, the NRC must make a determination that "there is reasonable assurance that adequate protective measures can and will be taken in the event of a radiological emergency." 10 CFR 50.47(a)(1)(i). "The NRC will base its finding on a review of the Federal Emergency Management Agency (FEMA) findings and determinations as to whether State and local emergency plans are adequate and whether there is reasonable assurance that they can be implemented, and on the NRC assessment as to whether the applicant's onsite emergency plans are adequate and whether there is reasonable assurance that they can be implemented." 10 CFR 50.47(a)(2).

Section 50.47(b) provide the standards that onsite and offsite emergency response plans must meet. These standards were developed with FEMA as part of the 1980 final rule and can also be found in FEMA's regulations at 44 CFR 350.5. Appendix E to 10 CFR Part 50 contains the information license applicants are required to include in their license applications. Offsite response plans are among the required information. Under 10 CFR 50.54(q), NRC licensees must continue to meet these standards and requirements as a condition of their license.

Hope this helps.

Howard

From: Droggitis, Spiros
Sent: Tuesday, March 22, 2011 5:05 PM
To: Riley (OCA), Timothy
Subject: FW: NRC EP rules and authority
Attachments: 1980 EP Final Rule.pdf; FEMA-NRC MOU 44cfr353-A.pdf

Here's the answer to Kathy Dedrick's question which I forwarded to Jenny to forward to Kathy. You may be able to use this too.

From: Benowitz, Howard
Sent: Tuesday, March 22, 2011 4:43 PM
To: Droggitis, Spiros
Subject: NRC EP rules and authority

Spiros:

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The attached final rule FRN (on page 55406) explains the separation of authorities between the NRC and FEMA, based on President Carter's December 7, 1979, directive (which can be found in NUREG-0980, Vol. 1), and the subsequent identification of each agency's responsibilities through an MOU. The most recent version of this MOU is attached hereto. (The MOU, at page 613, second column, includes this relevant sentence: "While the Atomic Energy Act does not specifically require emergency plans and related preparedness measures, the NRC requires consideration of overall emergency preparedness as a part of the licensing process.")

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Hope this helps.

Howard

DM/13

NUCLEAR REGULATORY COMMISSION

10 CFR Parts 50 and 70

Emergency Planning

AGENCY: U.S. Nuclear Regulatory Commission.

ACTION: Final rule.

SUMMARY: The Nuclear Regulatory Commission is upgrading its emergency planning regulations in order to assure that adequate protective measures can and will be taken in the event of a radiological emergency. Nuclear power plants and certain other licensed facilities are required to submit their emergency plans, together with the emergency response plans of State and local governments, to the Commission. The Commission and the Federal Energy Management Agency will review the plans for adequacy. The amendment also extends emergency planning considerations to "Emergency Planning Zones", and makes additional clarifications.

EFFECTIVE DATE: November 3, 1980.

Note.—The Nuclear Regulatory Commission has submitted this rule to the Comptroller General for review of the reporting requirements in the rule, pursuant to the Federal Reports Act, as amended (44 U.S.C. 3512). The date on which the reporting requirements of the rule become effective includes a 45-day period, which the statute allows for Comptroller General review (44 U.S.C. 3512(c)(2)).

FOR FURTHER INFORMATION CONTACT: Mr. Michael T. Jamgochian, Office of Standards Development, U.S. Nuclear Regulatory Commission, Washington, D.C. 20555 (telephone: 301-443-5966).

SUPPLEMENTARY INFORMATION: On September 19, 1979 and on December 19, 1979, the Commission published for public comment (44 FR 54308 and 44 FR 75167) proposed amendments to its emergency planning regulations for production and utilization facilities. Extensive comments were received, all of which were evaluated and considered in developing the final rule. The comments received and the staff's evaluation is contained in NUREG-0684. In addition, the NRC conducted four Regional Workshops to solicit comments; these comments are available in NUREG/CP-0011 (April 1980).¹

¹ Copies of NUREG documents are available at the Commission's Public Document Room, 1717 H Street, NW., Washington, D.C. 20555. Copies may be purchased from the Government Printing Office. Information on current prices may be obtained by writing the U.S. Nuclear Regulatory Commission.

The final regulation contains the following elements:

1. In order to continue operations or to receive an operating license an applicant/licensee will be required to submit its emergency plans, as well as State and local governmental emergency response plans, to NRC. The NRC will then make a finding as to whether the state of onsite and offsite emergency preparedness provides reasonable assurance that adequate protective measures can and will be taken in the event of a radiological emergency. The NRC will base its finding on a review of the Federal Emergency Management Agency (FEMA) findings and determinations as to whether State and local emergency plans are adequate and capable of being implemented and on the NRC assessment as to whether the licensee's/applicant's emergency plans are adequate and capable of being implemented. These issues may be raised in NRC operating license hearings, but a FEMA finding will constitute a rebuttable presumption on the question of adequacy.

2. Emergency planning considerations will be extended to "Emergency Planning Zones,"

3. Detailed emergency plan implementing procedures of licensees/applicants will be required to be submitted to NRC for review, and

4. Requirements in 10 CFR Part 50, Appendix E are clarified and upgraded.

Background

In June 1979, the Nuclear Regulatory Commission began a formal reconsideration of the role of emergency planning in ensuring the continued protection of the public health and safety in areas around nuclear power facilities. The Commission began this reconsideration in recognition of the need for more effective emergency planning and in response to the TMI accident and to reports issued by responsible offices of government and the NRC's Congressional oversight committees.

On December 19, 1979, the Nuclear Regulatory Commission published in the Federal Register (44 FR 75167) proposed amendments to 10 CFR Part 50 and Appendix E to Part 50 of its regulations. Publication of these final rule changes in the Federal Register is not only related to the December 19, 1979 proposed rule changes but also incorporates the proposed changes to 10 CFR Parts 50 and 70 (44 FR 54308) published on September 19, 1979. Interested persons were invited to submit written

Washington, D.C. 20555, Attention: Publications Sales Manager.

comments/suggestions in connection with the proposed amendments within 60 days after publication in the Federal Register. During this comment period (in January 1980) the Commission conducted four regional workshops with State and local officials, utility representatives, and the public to discuss the feasibility of the various portions of the proposed amendments, their impact, and the procedures proposed for complying with their provisions. The NRC used the information from these workshops along with the public comment letters to develop the final rule (more than 200 comment letters and the points made in two petitions for rulemaking were also considered).

In addition to the above, on June 25, 1980, the Commission was briefed by three panels of public commenters on the rule, one each comprised of representatives from the industry, State and local governments, and public interest groups. Each panel raised important concerns regarding the final rule. On July 3, 1980, the Commission was briefed by its staff in response to these panels, including several modifications to the proposed final rules. Finally, on July 23, 1980, at the final Commission consideration of these rules, the Commission was briefed by the General Counsel on the substance of conversations with Congressional staff members who were involved with passage of the NRC Authorization Act for fiscal year 1980, Pub. L. No. 96-295. The General Counsel advised the Commission that the NRC final rules were consistent with that Act. The Commission has relied on all of the above information in its consideration of these final rules. In addition, the Commission directs that the transcripts of these meetings shall be part of the administrative record in this rulemaking. However, the transcripts have not been reviewed for accuracy and, therefore, are only an informal record of the matters discussed.

After evaluating all public comment letters received and all the information obtained during the workshops as well as additional reports such as the Presidential Commission and the NRC Special Inquiry Group Reports, the Commission has decided to publish the final rule changes described below.

Description of Final Rule Changes

The Commission has decided to adopt a version of the proposed rules similar to alternative A described in Sections 50.47 and 50.54 in the Federal Register Notice dated December 19, 1979 (44 FR 75167), as modified in light of comments. These rules are consistent with the

approach outlined by FEMA and NRC in a Memorandum of Understanding (45 FR 5847, January 24, 1980). No new operating license will be granted unless the NRC can make a favorable finding that the integration of onsite and offsite emergency planning provides reasonable assurance that adequate protective measures can and will be taken in the event of a radiological emergency. In the case of an operating reactor, if it is determined that there are such deficiencies that a favorable NRC finding is not warranted and if the deficiencies are not corrected within 4 months of that determination, the Commission will determine expeditiously whether the reactor should be shut down or whether some other enforcement action is appropriate, pursuant to procedures provided for in 10 CFR 2.200-2.206. In any case where the Commission believes that the public health, safety, or interest so requires, the plant will be required to shut down immediately (10 CFR 2.202(f), see 5 U.S.C. 558(c)).

The standards that the NRC will use in making its determinations under these rules are set forth in the final regulation. Wherever possible, these standards may blend with other emergency planning procedures for nonnuclear emergencies presently in existence. The standards are a restatement of basic NRC and now joint NRC-FEMA guidance to licensees and to State and local governments. See NUREG-0654; FEMA-REP-1, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants for Interim Use and Comment," (January 1980). In deciding whether to permit reactor operation in the face of some deficiencies, the Commission will examine among other factors whether the deficiencies are significant for the reactor in question, whether adequate interim compensatory actions have been or will be taken promptly, or whether other compelling reasons exist for reactor operation. In determining the sufficiency of "adequate interim compensatory actions" under this rule, the Commission will examine State plans, local plans, and licensee plans to determine whether features of one plan can compensate for deficiencies in another plan so that the level of protection for the public health and safety is adequate. This interpretation is consistent with the provisions of the NRC Authorization Act for fiscal year 1980, Pub. L. 96-295.

The regulation contains the following three major changes from past practices:

1. In order to continue operations or to receive an operating license, an

applicant/licensee will be required to submit its emergency plans, as well as State and local governmental emergency response plans, to NRC. The NRC will then make a finding as to whether the state of onsite and offsite emergency preparedness provides reasonable assurance that adequate protective measures can and will be taken in the event of a radiological emergency.

The NRC will base its finding on a review of the FEMA findings and determinations as to whether State and local emergency plans are adequate and capable of being implemented and on the NRC assessment as to whether the applicant's/licensee's emergency plans are adequate and capable of being implemented. In any NRC licensing proceeding, a FEMA finding will constitute a rebuttable presumption on the question of adequacy. Specifically:

a. An operating license will not be issued unless a favorable NRC overall finding can be made.

b. After April 1, 1981, an operating plant may be required to shut down if it is determined that there are deficiencies such that a favorable NRC finding cannot be made or is no longer warranted and the deficiencies are not corrected within 4 months of that determination.

2. Emergency planning considerations must be extended to "Emergency Planning Zones," and

3. Detailed emergency planning implementing procedures of both licensees and applicants for operating licenses must be submitted to NRC for review.

In addition, the Commission is revising 10 CFR Part 50, Appendix E, "Emergency Plans for Production and Utilization Facilities," in order to clarify, expand, and upgrade the Commission's emergency planning regulations. Sections of Appendix E that are expanded include:

1. Specification of "Emergency Action Levels" (Sections IV.B and C)

2. Dissemination to the public of basic emergency planning information (Section IV.D)

3. Provisions for the State and local governmental authorities to have a capability for rapid notification of the public during a serious reactor emergency, with a design objective of completing the initial notification within 15 minutes after notification by the licensee (Section IV.D)

4. A licensee onsite technical support center and a licensee near site emergency operations facility (Section IV.E)

5. Provisions for redundant communications systems (Section IV.E)

6. Requirement for specialized training (Section IV.F)

7. Provisions for up-to-date plan maintenance (Section IV.G)

Applicants for a construction permit would be required to submit more information as required in the new Section II of Appendix E.

Rationale for the Final Rules

The Commission's final rules are based on the significance of adequate emergency planning and preparedness to ensure adequate protection of the public health and safety. It is clear, based on the various official reports described in the proposed rules (44 FR 75169) and the public record compiled in this rulemaking, that onsite and offsite emergency preparedness as well as proper siting and engineered design features are needed to protect the health and safety of the public. As the Commission reacted to the accident at Three Mile Island, it became clear that the protection provided by siting and engineered design features must be bolstered by the ability to take protective measures during the course of an accident. The accident also showed clearly that onsite conditions and actions, even if they do not cause significant offsite radiological consequences, will affect the way the various State and local entities react to protect the public from any dangers associated with the accident. In order to discharge effectively its statutory responsibilities, the Commission must know that proper means and procedures will be in place to assess the course of an accident and its potential severity, that NRC and other appropriate authorities and the public will be notified promptly, and that adequate protective actions in response to actual or anticipated conditions can and will be taken.

The Commission's organic statutes provide it with a unique degree of discretion in the execution of agency functions. *Siegel v. AEC*, 400 F.2d 778, 783 (D.C. Cir. 1968), see *Westinghouse Electric Corp. v. NRC*, 598 F.2d 759, 771 & n.47 (3d Cir. 1979). "Both the Atomic Energy Act of 1954 and the Energy Reorganization Act of 1974 confer broad regulatory functions on the Commission and specifically authorize it to promulgate rules and regulations it deems necessary to fulfill its responsibilities under the Acts, 42 U.S.C. § 2201(p)." *Public Service Co. of New Hampshire v. NRC*, 582 F.2d 77, 82 (1st Cir.), cert. denied, 439 U.S. 1046 (1978). See 42 U.S.C. 2133(a). As the Supreme Court stated almost 20 years ago, the Atomic Energy Act "clearly contemplates that the Commission shall

by regulation set forth what the public safety requirements are as a prerequisite to the issuance of any license or permit under the Act," *Power Reactor Development Co. v. International Union of Electrical Radio Machine Workers*, 367 U.S. 396, 404 (1961). Finally, it is also clear that "Congress, when it enacted [42 U.S.C. 2236] . . . , must have envisioned that licensing standards, especially in the areas of health and safety regulation, would vary over time as more was learned about the hazards of generating nuclear energy. Insofar as those standards became more demanding, Congress surely would have wanted the new standards, if the Commission deemed it appropriate, to apply to those nuclear facilities already licensed," *Ft. Pierce Utilities Authority v. United States*, 606 F.2d 986, 996 (D.C. Cir. 1979).

In response to and guided by the various reports and public comments, as well as its own determination on the significance of emergency preparedness, the Commission has therefore concluded that adequate emergency preparedness is an essential aspect in the protection of the public health and safety. The Commission recognizes there is a possibility that the operation of some reactors may be affected by this rule through inaction of State and local governments or an inability to comply with these rules. The Commission believes that the potential restriction of plant operation by State and local officials is not significantly different in kind or effect from the means already available under existing law to prohibit reactor operation, such as zoning and land-use laws, certification of public convenience and necessity, State financial and rate considerations (10 CFR 50.33(f)), and Federal environmental laws. The Commission notes, however, that such considerations generally relate to a one-time decision on siting, whereas this rule requires a periodic renewal of State and local commitments to emergency preparedness. Relative to applying this rule in actual practice, however, the Commission need not shut down a facility until all factors have been thoroughly examined. The Commission believes, based on the record created by the public workshops, that State and local officials as partners in this undertaking will endeavor to provide fully for public protection.

Summary of Comments on Major Issues

The Commission appreciates the extensive public comments on this important rule. In addition to the record of the workshops, the NRC has received over 200 comment letters on the

proposed rule changes. The following major issues have been raised in the comments received.

Issue A: NRC Review and Concurrence in State and Local Radiological Plans

1. FEMA is best suited to assess the adequacy of State and local radiological emergency planning and preparedness and report any adverse findings to NRC for assessment of the licensing consequences of those findings.

2. The proposed rule fails to provide objective standards for NRC concurrence, reconcurrence, and withdrawal of concurrence.

3. In the absence of additional statutory authority, the proposed rule frustrates Congressional intent to preempt State and local government veto power over nuclear power plant operation.

4. Procedures and standards for adjudication of emergency planning disputes are not adequately specified in the proposed rule.

Issue B: Emergency Planning Zones (EPZs)

1. Regulatory basis for imposition of the Emergency Planning Zone concept should be expressly stated in the regulation.

2. Provisions regarding the plume exposure pathway EPZ should provide a maximum planning distance of 10 miles.

3. References to NUREG-0396 should be deleted to avoid disputes over its meaning in licensing proceedings.

Issue C: Alternative A and B (in 50.47 and 50.54)

1. Neither alternative is necessary because the Commission has sufficient authority to order a plant shut down for safety reasons and should be prepared to exercise that authority only on a case-by-case basis and when a particular situation warrants such action.

2. No case has been made by the Commission for the need for automatic shutdown, as would be required in alternative B, and certainly no other NRC regulations exist that would require such action based on a concept as amorphous as "concurrence in State and local emergency plans."

3. The idea that the Commission might grant an exemption to the rules that would permit continued operation (under alternative B) has little significance, primarily because 10 CFR Part 50.12(a) already permits the granting of exemptions.

4. The process and procedures for obtaining such exemptions are not defined, nor is there any policy indication that would indicate the

Commission's disposition to grant such exemptions.

5. The Commission, in developing this aspect of the proposed rule, must consider its own history. There was time when regulation was characterized by the leaders of the agency by simple and very appropriate expressions. The process was to be "effective and efficient." The application of regulatory authority was to be "firm, but fair." Regardless of the outcome of the "concurrence" issue, the Commission must appreciate that alternative B is not fair. It is not effective regulation.

Issue D: Public Education

Only information required to inform the public about what to do in the event of a radiological emergency need be disseminated. There should be flexibility, in any particular case, as to who will be ultimately responsible for disseminating such information.

Issue E: Legal Authority

1. A few commenters felt that NRC had no authority to promulgate a rule as the one proposed.

2. Other comments were the nature that NRC has statutory authority only inside the limits of the plant site.

3. Some commenters suggested that NRC and FEMA should seek additional legislation to compel State and local governments to have emergency plans, if that is what is necessary.

Issue F: Schedule for Implementation

The schedule for implementing the proposed rule was considered to be unrealistic and in some cases in conflict with various State schedules already in existence. A sampling of the comments on the implementation schedule follows:

1. The 180 days in the schedule is an insufficient amount of time to accomplish tasks of this magnitude; the Federal government does not work with such speed. States are bureaucracies also; there is no reason to assume they can work faster. It took years of working with States to get the plans that are presently concurred in. It is just insufficient time for new concurrences and review. Also, to get a job done within that time frame means a hurried job, rather than an acceptable and meaningful plan.

2. The time provided is inadequate for States to acquire the hardware needed. States must go out for competitive bids just as the Federal government does. Between processing and accepting a bid and actual delivery of equipment, it may take a year to get the hardware. The State budgets years ahead; therefore, if a State or local government needs more money, it may have to go to the

legislature. This is a time-consuming public process that may not fit the Federal schedule.

3. NRC and FEMA could not review 70 or more plans and provide concurrence by January 1, 1981. The Federal government moves slowly. Commenters did not think that NRC and FEMA can review all the plans within the time frame scheduled. If the Federal government cannot meet its schedule, why or how should the States?

4. Funding could not be appropriated by State and local governments before the deadline. It was suggested that the Commission use H. Rept. #96-413, "Emergency Planning U.S. Nuclear Power Plants: Nuclear Regulatory Commission Oversight," for the time frame rather than that in the proposed rule or use a sliding-scale time frame since States are at various stages of completing their emergency plans.

Issue G: Impact of Proposed Rule

1. The proposed regulations were considered by some commenters as unfair to utilities because it was felt they place the utilities in the political and financial role that FEMA should be assuming. NRC is seen as in effect giving State and local governments veto over the operation of nuclear plants. It was questioned whether this was an intent of the rule. In addition, it was felt that utilities, their customers, and their shareholders should not be penalized by a shutdown (with a resulting financial burden) because of alleged deficiencies or lack of cooperation by State and local officials.

2. It was suggested that NRC's Office of Inspection and Enforcement conduct the reviews of the State and local governmental emergency response plans in order to ensure prompt, effective, and consistent implementation of the proposed regulations.

3. One commenter noted that the public should be made aware of the issue of intermediate and long-term impacts of plant shutdowns. Specifically, people should be informed of the possibility of "brownouts," cost increases to the consumer due to securing alternative energy sources, and the health and safety factors associated with those alternative sources.

Issue H: Public Notification

1. Ultimate responsibility for public notification of a radiological emergency must be placed on State and local government.

2. The "fifteen minute" public notification rule is without scientific justification, fails to differentiate between areas close in and further away from the site, and ignores the technical

difficulties associated with such a requirement.

Issue I: Emergency Action Levels

Applicants, in cooperation with State and local governmental authorities, should be permitted the necessary flexibility to develop emergency action level criteria appropriate for the facility in question, subject to NRC approval. Inflexible NRC emergency action level standards are not necessary.

Issue J: Training

1. Mandatory provision for training local service personnel and local news media persons is outside of NRC's jurisdiction and is not necessary to protect the public health and safety.

2. Public participation in drills or critiques thereof should not be required.

3. The provision regarding formal critiques should be clarified to mean the licensee is responsible for developing and conducting such critiques.

4. Definitive performance criteria for evaluation of drills should be developed by the licensee, subject to NRC approval.

Issue K: Implementing Procedures

NRC review of implementing procedures is only necessary to apprise the NRC staff of the details of the plans for use by the NRC during the course of an actual emergency.

Issue L: Funding

1. Nuclear facilities, although located in one governmental tax jurisdiction and taxed by that jurisdiction, affect other jurisdictions that must bear immediate and long-term planning costs without having access to taxes from the facility.

2. As the radius of planning requirements becomes greater, few facilities are the concern of a single county. The planning radius often encompasses county lines, State lines, and in some instances, international boundaries.

3. As new regulations are generated to oversee the nuclear industry and old ones expanded, there is an immediate need to address fixed nuclear facility planning at all levels of government, beginning at the lowest and going to the highest. All levels of government need access to immediate additional funds to upgrade their response capability.

4. It is well understood that the consumer ultimately must pay the price for planning, regardless of the level in government at which costs are incurred. It becomes a matter of how the consumer will be taxed, who will administer the tax receipts, and what is the most effective manner in which to address the problem.

5. The basis for effective offsite response capabilities is a sound emergency preparedness program. Federal support (funding and technical assistance) for the development of State and local offsite capabilities should be incorporated into FEMA's preparedness program for all emergencies.

Issue M: General

The States support Federal oversight and guidance in the development of offsite response capabilities. However, many States feel the confusion and uncertainty in planning requirements following Three Mile Island is not a proper environment in which to develop effective capabilities nor does it serve the best interests of their citizens. The development of effective nuclear facility incident response capabilities will require close coordination and cooperation among responsible Federal agencies, State government, and the nuclear industry. An orderly and comprehensive approach to this effort makes it necessary that onsite responsibilities be clearly associated with NRC and the nuclear industry while deferring offsite responsibilities to State government with appropriate FEMA oversight and assistance.

In addition to these comments, two petitions for rulemaking were filed in reference to the proposed rule. These were treated as public comments rather than petitions and were considered in developing the final rule.

The Commission has placed the planning objectives from NUREG-0654; FEMA-REP-1, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants for Interim Use and Comment," January 1980, into the final regulations. Comments received concerning NUREG-0654 were available in developing the final regulation. The Commission notes that the planning objectives in NUREG-0654 were largely drawn from NUREG-75/111, "Guide and Checklist for Development and Evaluation of State and Local Government Radiological Emergency Response Plans in Support of Fixed Nuclear Facilities," (December 1, 1974) and Supplement 1 thereto dated March 15, 1977, which have been in use for some time.

The approximately 60 public comment letters received on NUREG-0654 were not critical of the proposed planning objectives. The Commission also notes that at the May 1, 1980 ACRS meeting, the Atomic Industrial Forum representative encouraged the use of the planning objectives from NUREG-0654 in the final regulations in order to

reduce ambiguity and provide specificity to the final regulation.

Based on the above, the Commission has decided to modify the proposed rule changes in the areas discussed in paragraphs I through X below.

I. FEMA/NRC Relationship

In issuing this rule, NRC recognizes the significant responsibilities assigned to FEMA, by Executive Order 12148 on July 15, 1979, to coordinate the emergency planning functions of executive agencies. In view of FEMA's new role, NRC agreed on September 11, 1979, that FEMA should henceforth chair the Federal Interagency Central Coordinating Committee for Radiological Emergency Response Planning and Preparedness (FICCC). On December 7, 1979, the President issued a directive assigning FEMA lead responsibility for offsite emergency preparedness around nuclear facilities. The NRC and FEMA immediately initiated negotiations for a Memorandum of Understanding (MOU) that lays out the agencies' roles and provides for a smooth transfer of responsibilities. It is recognized that the MOU, which became effective January 14, 1980, supersedes some aspects of previous agreements. Specifically, the MOU identifies FEMA responsibilities with respect to emergency preparedness as they relate to NRC as the following:

1. To make findings and determinations as to whether State and local emergency plans are adequate.
2. To verify that State and local emergency plans are capable of being implemented (e.g., adequacy and maintenance of procedures, training, resources, staffing levels and qualification, and equipment).
3. To assume responsibility for emergency preparedness training of State and local officials.
4. To develop and issue an updated series of interagency assignments that delineate respective agency capabilities and responsibilities and define procedures for coordination and direction for emergency planning and response.

Specifically, the NRC responsibilities for emergency preparedness identified in the MOU are:

1. To assess licensee emergency plans for adequacy.
2. To verify that licensee emergency plans are adequately implemented (e.g., adequacy and maintenance of procedures, training, resources, staffing levels and qualifications, and equipment).
3. To review the FEMA findings and determinations on the adequacy and

capability of implementation of State and local plans.

4. To make decisions with regard to the overall state of emergency preparedness (i.e., integration of the licensee's emergency preparedness as determined by the NRC and of the State/local governments as determined by FEMA and reviewed by NRC) and issuance of operating licenses or shutdown of operating reactors.

In addition, FEMA has prepared a proposed rule regarding "Review and Approval of State Radiological Emergency Plans and Preparedness" (44 FR 42342, dated June 24, 1980). According to the proposed FEMA rule, FEMA will approve State and local emergency plans and preparedness, where appropriate, based upon its findings and determinations with respect to the adequacy of State and local plans and the capabilities of State and local governments to effectively implement these plans and preparedness measures. These findings and determinations will be provided to the NRC for use in its licensing process.

II. Emergency Planning Zone Concept

The Commission notes that the regulatory basis for adoption of the Emergency Planning Zone (EPZ) concept is the Commission's decision to have a conservative emergency planning policy in addition to the conservatism inherent in the defense-in-depth philosophy. This policy was endorsed by the Commission in a policy statement published on October 23, 1979 (44 FR 61123). At that time the Commission stated that two Emergency Planning Zones (EPZs) should be established around each light-water nuclear power plant. The EPZ for airborne exposure has a radius of about 10 miles; the EPZ for contaminated food and water has a radius of about 50 miles. Predetermined protective action plans are needed for the EPZs. The exact size and shape of each EPZ will be decided by emergency planning officials after they consider the specific conditions at each site. These distances are considered large enough to provide a response base that would support activity outside the planning zone should this ever be needed.

III. Position on Planning Basis for Small Light-Water Reactors and Ft. St. Vrain

The Commission has concluded that the operators of small light-water-cooled power reactors (less than 250 MWt) and the Ft. St. Vrain gas-cooled reactor may establish smaller planning zones which will be evaluated on a case-by-case basis. This conclusion is based on the lower potential hazard from these facilities (lower radionuclide inventory

and longer times to release significant amounts of activity in many scenarios). Guidance regarding the radionuclides to be considered in planning is set forth in NUREG-0396; EPA 520/1-78-016, "Planning Basis for the Development of State and Local Government Radiological Emergency Response Plans in Support of Light-Water Nuclear Power Plants," December 1978.

IV. Rationale for Alternatives Chosen

In a few areas of the proposed rule, the Commission identified two alternatives that it was considering. Many public comments were received on these alternatives; based on due consideration of all comments received as well as the discussions presented during the workshops, the Commission has determined which of each pair of alternatives to retain in the final rule.

In Sections 50.47 and 50.54 (s) and (t), the alternatives dealt with conditioning the issuance of an operating license or continued operation of a nuclear power plant on the existence of State and local government emergency response plans concurred in by NRC.* The basic difference between alternatives A and B in these sections was that, under alternative A, the proposed rule would require a determination by NRC on issuing a license or permitting continued operation of plants in those cases where relevant State and local emergency response plans had not received NRC concurrence. Denial of a license or shutdown of a reactor would not follow automatically in every case. Under alternative B, shutdown of the reactor would be required automatically if the appropriate State and local emergency response plans had not received NRC concurrence within the prescribed time periods unless an exemption is granted.

After consideration of the public record and on the recommendation of its staff, the Commission has chosen a text for Sections 50.47 and 50.54 (s) and (t) that is similar to, but less restrictive than, alternative A in the proposed rule. Rather than providing for the shutdown of the reactor as the only enforcement action and prescribing specific preconditions for the shutdown remedy, the final rule makes clear that for emergency planning rules, like all other rules, reactor shutdown as outlined in the rule is but one of a number of possible enforcement actions and many factors should be considered in determining whether it is an appropriate action in a given case. This Commission choice is consistent with most of the comments received from State and local

* See Section V for a discussion concerning "concurrence."

governments and is consistent with the provisions of Section 109 of the NRC fiscal year 1980 Authorization Act. Alternative B was seen by some of the commenters as potentially causing unnecessarily harsh economic and social consequences to State and local governments, utilities, and the public.

State and local governments that are directly involved in implementing planning objectives of the rule strongly favor alternative A since it provides for a cooperative effort with State and local governments to reflect their concerns and desires in these rules. This choice is responsive to that effort. In addition, the industry strongly supported alternative A as being the more workable of the two alternatives.

In Appendix E, Sections II.C and III, alternative A would require an applicant/licensee to outline "... corrective measures to prevent damage to onsite and offsite property," as well as protective measures for the public. Alternative B addresses only protective measures for the public health and safety. The Commission has chosen alternative B because public health and safety should take clear precedence over actions to protect property. Measures to protect property can be taken on an ad hoc basis as resources become available after an accident.

In Appendix E, under Training, alternative A would provide for a joint licensee, Federal, State, and local government exercise every 3 years, whereas alternative B would provide for these exercises to be performed every 5 years at each site. The Commission has chosen alternative B because the Commission is satisfied that the provision that these exercises be performed every 5 years for each site will allow for an adequate level of preparedness among Federal emergency response agencies. In addition, under these regulations, each licensee is required to exercise annually with local governmental authorities. Furthermore, Federal emergency response agencies may have difficulty supporting exercises every 3 years for all of the nuclear facilities that would be required to comply with these rule changes.

V. Definition of Plan Approval Process

The term "concurrence" has been deleted from the proposed regulations and replaced with reference to the actual procedure and standards that NRC and FEMA have agreed upon and are implementing. According to the agreed upon procedure, FEMA will make a finding and determination as to the adequacy of State and local government emergency response plans. The NRC will determine the adequacy of

the licensee emergency response plans. After these two determinations have been made, NRC will make a finding in the licensing process as to the overall and integrated state of preparedness.

It was pointed out to the Commission at the workshops and in public comment letters that the term "concurrence" was confusing and ambiguous. Also, there was a great deal of misunderstanding with the use of the term because, in the past, the obtaining of NRC "concurrence" in State emergency response plans was voluntary on behalf of the States and not a regulatory requirement in the licensing process. Previously too, "concurrence" was statewide rather than site-specific.

VI. Fifteen-Minute Notification

The requirement for the capability for notification of the public within 15 minutes after the State/local authorities have been notified by the licensee has been expanded and clarified. It also has been removed as a footnote and placed in the body of Appendix E. The implementation schedule for this requirement has been extended to July 1, 1981. This extension of time has been adopted because most State and local governments identified to the Commission the difficulty in procuring hardware, contracting for installation, and developing procedures for operating the systems used to implement this requirement.

The Commission is aware that various commenters, largely from the industry, have objected to the nature of the 15-minute notification requirement, indicating that it may be both arbitrary and unworkable.

Among the possible alternatives to this requirement are a longer notification time, a notification time that varies with distance from the facility, or no specified time. In determining what that criterion should be, a line must be drawn somewhere, and the Commission believes that providing as much time as practicable for the taking of protective action is in the interest of public health and safety. The Commission recognizes that this requirement may present a significant financial impact and that the technical basis for this requirement is not without dispute. Moreover, there may never be an accident requiring using the 15-minute notification capability. However, the essential rationale behind emergency planning is to provide additional assurance for the public protection even during such an unexpected event. The 15-minute notification capability requirement is wholly consistent with that rationale.

The Commission recognizes that no single accident scenario should form the

basis for choice of notification capability requirements for offsite authorities and for the public. Emergency plans must be developed that will have the flexibility to ensure response to a wide spectrum of accidents. This wide spectrum of potential accidents also reflects on the appropriate use of the offsite notification capability. The use of this notification capability will range from immediate notification of the public (within 15 minutes) to listen to predesignated radio and television stations, to the more likely events where there is substantial time available for the State and local governmental officials to make a judgment whether or not to activate the public notification system.

Any accident involving severe fuel degradation or core melt that results in significant inventories of fission products in the containment would warrant immediate public notification and consideration, based on the particular circumstances, of appropriate protective action because of the potential for leakage of the containment building. In addition, the warning time available for the public to take action may be substantially less than the total time between the original initiating event and the time at which significant radioactive releases take place. Specification of particular times as design objectives for notification of offsite authorities and the public are a means of ensuring that a system will be in place with the capability to notify the public to seek further information by listening to predesignated radio or television stations. The Commission recognizes that not every individual would necessarily be reached by the actual operation of such a system under all conditions of system use. However, the Commission believes that provision of a general alerting system will significantly improve the capability for taking protective actions in the event of an emergency. The reduction of notification times from the several hours required for street-by-street notification to minutes will significantly increase the options available as protective actions under severe accident conditions. These actions could include staying indoors in the case of a release that has already occurred or a precautionary evacuation in the case of a potential release thought to be a few hours away. Accidents that do not result in core melt may also cause relatively quick releases for which protective actions, at least for the public in the immediate plant vicinity, are desirable.

Some comments received on the proposed rule advocated the use of a staged notification system with quick notification required only near the plant. The Commission believes that the capability for quick notification within the entire plume exposure emergency planning zone should be provided but recognizes that some planners may wish to have the option of selectively actuating part of the system during an actual response. Planners should carefully consider the impact of the added decisions that offsite authorities would need to make and the desirability of establishing an official communication link to all residents in the plume exposure emergency planning zone when determining whether to plan for a staged notification capability.

VII. Effective Date of Rules and Other Guidance

Prior to the publication of these amendments, two guidance documents were published for public comment and interim use. These are NUREG-0610, "Draft Emergency Action Level Guidelines for Nuclear Power Plants," (September 1979) and NUREG-0654/FEMA-REP-1, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants for Interim Use and Comment," (January 1980). It is expected that versions of these documents, revised on the basis of public comments received, will be issued to assist in defining acceptable levels of preparedness to meet this final regulation. In the interim, these documents should continue to be used as guidance.

VIII. Hearing Procedures Used in Implementation of These Regulations

Should the NRC believe that the overall state of emergency preparedness at and around a licensed facility is such that there is some question whether a facility should be permitted to continue to operate, the Commission may issue an order to the licensee to show cause, pursuant to 10 CFR 2.202, why the plant should not be shut down. This issue may arise, for example, if NRC finds a significant deficiency in a licensee plan or in the overall state of emergency preparedness.

If the NRC decides to issue an order to show cause, it will provide the licensee the opportunity to demonstrate to the Commission's satisfaction, for example, that the alleged deficiencies are not significant for the reactor in question, whether adequate interim compensating actions have been or will be taken promptly, or whether other compelling

reasons exist for reactor operation. Finally, pursuant to 10 CFR 2.202(f), the Commission may, in appropriate circumstances, make the order immediately effective, which could result in immediate plant shutdown subject to a later hearing.

IX. Funding

In view of the requirements in these rule changes regarding the actions to be taken in the event State and local government planning and preparedness are or become inadequate, a utility may have an incentive, based on its own self interest as well as its responsibility to provide power, to assist in providing manpower, items of equipment, or other resources that the State and local governments may need but are themselves unable to provide. The Commission believes that in view of the President's Statement of December 7, 1979, giving FEMA the lead role in offsite planning and preparedness, the question of whether the NRC should or could require a utility to contribute to the expenses incurred by State and local governments in upgrading and maintaining their emergency planning and preparedness (and if it is to be required, the mechanics for doing so) is beyond the scope of the present rule change. It should be noted, however, that any direct funding of State or local governments solely for emergency preparedness purposes by the Federal government would come through FEMA.

X. Exercises

On an annual basis, all commercial nuclear power facilities will be required by NRC to exercise their plans; these exercises should involve exercising the appropriate local government plans in support of these facilities. The State may choose to limit its participation in exercises at facilities other than the facility (site) chosen for the annual exercise(s) of the State plan.

Each State and appropriate local government shall annually conduct an exercise jointly with a commercial nuclear power facility. However, States with more than one facility (site) shall schedule exercises such that each individual facility (site) is exercised in conjunction with the State and appropriate local government plans not less than once every 3 years for sites with the plume exposure pathway EPZ partially or wholly within the State, and not less than once every 5 years for sites with the ingestion exposure pathway EPZ partially or wholly within the State. The State shall choose, on a rotational basis, the site(s) at which the required annual exercise(s) is to be conducted; priority shall be given to new facilities

seeking an operating license from NRC that have not had an exercise involving the State plan at that facility site.

The Commission has determined under the criteria in 10 CFR Part 51 that an environmental impact statement for the amendments to 10 CFR Part 50 and Appendix E thereof is not required. This determination is based on

"Environmental Assessment for Final Changes to 10 CFR Part 50 and Appendix E of 10 CFR Part 50, Emergency Planning Requirements for Nuclear Power Plants" (NUREG-0685, June 1980). Comments on the "Draft Negative Declaration; Finding of No Significant Impact" (45 FR 3913, January 21, 1980) were considered in the preparation of NUREG-0685.

Pursuant to the Atomic Energy Act of 1954, as amended, the Energy Reorganization Act of 1974, as amended, and Sections 552 and 553 of Title 5 of the United States Code, notice is hereby given that the following amendments to Title 10, Chapter I, Code of Federal Regulations, Parts 50 and 70, are published as a document subject to codification.

Part 50—Domestic Licensing of Production and Utilization Facilities

1. Paragraph (g) of Section 50.33 is revised to read as follows:

§ 50.33 Contents of applications; general information.

(g) If the application is for an operating license for a nuclear power reactor, the applicant shall submit radiological emergency response plans of State and local governmental entities in the United States that are wholly or partially within the plume exposure pathway Emergency Planning Zone (EPZ)¹, as well as the plans of State governments wholly or partially within the ingestion pathway EPZ.² Generally, the plume exposure pathway EPZ for nuclear power reactors shall consist of an area about 10 miles (16 km) in radius and the ingestion pathway EPZ shall consist of an area about 50 miles (80 km) in radius. The exact size and configuration of the EPZs surrounding a particular nuclear power reactor shall be determined in relation to the local emergency response needs and

¹ Emergency Planning Zones (EPZs) are discussed in NUREG-0396, EPA 520/1-78-010, "Planning Basis for the Development of State and Local Government Radiological Emergency Response Plans in Support of Light-Water Nuclear Power Plants," December 1978.

² If the State and local emergency response plans have been previously provided to the NRC for inclusion in the facility docket, the applicant need only provide the appropriate reference to meet this requirement.

capabilities as they are affected by such conditions as demography, topography, land characteristics, access routes, and jurisdictional boundaries. The size of the EPZs also may be determined on a case-by-case basis for gas-cooled reactors and for reactors with an authorized power level less than 250 MW thermal. The plans for the ingestion pathway shall focus on such actions as are appropriate to protect the food ingestion pathway.

2. A new § 50.47 is added.

§ 50.47 Emergency plans.

(a)(1) No operating license for a nuclear power reactor will be issued unless a finding is made by NRC that the state of onsite and offsite emergency preparedness provides reasonable assurance that adequate protective measures can and will be taken in the event of a radiological emergency.

(2) The NRC will base its finding on a review of the Federal Emergency Management Agency (FEMA) findings and determinations as to whether State and local emergency plans are adequate and capable of being implemented, and on the NRC assessment as to whether the applicant's onsite emergency plans are adequate and capable of being implemented. In any NRC licensing proceeding, a FEMA finding will constitute a rebuttable presumption on a question of adequacy.

(b) The onsite and offsite emergency response plans for nuclear power reactors must meet the following standards:¹

(1) Primary responsibilities for emergency response by the nuclear facility licensee and by State and local organizations within the Emergency Planning Zones have been assigned, the emergency responsibilities of the various supporting organizations have been specifically established, and each principal response organization has staff to respond and to augment its initial response on a continuous basis.

(2) On-shift facility licensee responsibilities for emergency response are unambiguously defined, adequate staffing to provide initial facility accident response in key functional areas is maintained at all times, timely augmentation of response capabilities is available and the interfaces among various onsite response activities and offsite support and response activities are specified.

(3) Arrangements for requesting and effectively using assistance resources have been made, arrangements to accommodate State and local staff at the licensee's near-site Emergency Operations Facility have been made, and other organizations capable of augmenting the planned response have been identified.

(4) A standard emergency classification and action level scheme, the bases of which include facility system and effluent parameters, is in use by the nuclear facility licensee, and State and local response plans call for reliance on information provided by facility licensees for determinations of minimum initial offsite response measures.

(5) Procedures have been established for notification, by the licensee, of State and local response organizations and for notification of emergency personnel by all organizations; the content of initial and followup messages to response organizations and the public has been established; and means to provide early notification and clear instruction to the populace within the plume exposure pathway Emergency Planning Zone have been established.

(6) Provisions exist for prompt communications among principal response organizations to emergency personnel and to the public.

(7) Information is made available to the public on a periodic basis on how they will be notified and what their initial actions should be in an emergency (e.g., listening to a local broadcast station and remaining indoors), the principal points of contact with the news media for dissemination of information during an emergency (including the physical location or locations) are established in advance, and procedures for coordinated dissemination of information to the public are established.

(8) Adequate emergency facilities and equipment to support the emergency response are provided and maintained.

(9) Adequate methods, systems, and equipment for assessing and monitoring actual or potential offsite consequences of a radiological emergency condition are in use.

(10) A range of protective actions have been developed for the plume exposure pathway EPZ for emergency workers and the public. Guidelines for the choice of protective actions during an emergency, consistent with Federal guidance, are developed and in place, and protective actions for the ingestion exposure pathway EPZ appropriate to the locale have been developed.

(11) Means for controlling radiological exposures, in an emergency, are

established for emergency workers. The means for controlling radiological exposures shall include exposure guidelines consistent with EPA Emergency Worker and Lifesaving Activity Protective Action Guides.

(12) Arrangements are made for medical services for contaminated injured individuals.

(13) General plans for recovery and reentry are developed.

(14) Periodic exercises are (will be) conducted to evaluate major portions of emergency response capabilities, periodic drills are (will be) conducted to develop and maintain key skills, and deficiencies identified as a result of exercises or drills are (will be) corrected.

(15) Radiological emergency response training is provided to those who may be called on to assist in an emergency.

(16) Responsibilities for plan development and review and for distribution of emergency plans are established, and planners are properly trained.

(c)(1) Failure to meet the standards set forth in paragraph (b) of this subsection may result in the Commission declining to issue an Operating License; however, the applicant will have an opportunity to demonstrate to the satisfaction of the Commission that deficiencies in the plans are not significant for the plant in question, that adequate interim compensating actions have been or will be taken promptly, or that there are other compelling reasons to permit plant operation.

(2) Generally, the plume exposure pathway EPZ for nuclear power plants shall consist of an area about 10 miles (16 km) in radius and the ingestion pathway EPZ shall consist of an area about 50 miles (80 km) in radius. The exact size and configuration of the EPZs surrounding a particular nuclear power reactor shall be determined in relation to local emergency response needs and capabilities as they are affected by such conditions as demography, topography, land characteristics, access routes, and jurisdictional boundaries. The size of the EPZs also may be determined on a case-by-case basis for gas-cooled nuclear reactors and for reactors with an authorized power level less than 250 MW thermal. The plans for the ingestion pathway shall focus on such actions as are appropriate to protect the food ingestion pathway.

3. Section 50.54 is amended by adding five new paragraphs (q), (r), (s), (t), and (u).

§ 50.54 Conditions of licenses.

* * * * *

¹These standards are addressed by specific criteria in NUREG-0654: FEMA-REP-1 entitled "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants—For Interim Use and Comment" January 1980.

(q) A licensee authorized to possess and/or operate a nuclear power reactor shall follow and maintain in effect emergency plans which meet the standards in § 50.47(b) and the requirements in Appendix E of this Part. A licensee authorized to possess and/or operate a research reactor or a fuel facility shall follow and maintain in effect emergency plans which meet the requirements in Appendix E of this Part. The nuclear power reactor licensee may make changes to these plans without Commission approval only if such changes do not decrease the effectiveness of the plans and the plans, as changed, continue to meet the standards of § 50.47(b) and the requirements of Appendix E of this Part. The research reactor licensee and/or the fuel facility licensee may make changes to these plans without Commission approval only if such changes do not decrease the effectiveness of the plans and the plans, as changed, continue to meet the requirements of Appendix E of this Part. Proposed changes that decrease the effectiveness of the approved emergency plans shall not be implemented without application to and approval by the Commission. The licensee shall furnish 3 copies of each proposed change for approval; and/or if a change is made without prior approval, 3 copies shall be submitted within 30 days after the change is made or proposed to the Director of the appropriate NRC regional office specified in Appendix D, 10 CFR Part 20, with 10 copies to the Director of Nuclear Reactor Regulation, or, if appropriate, the Director of Nuclear Material Safety and Safeguards, U.S. Nuclear Regulatory Commission, Washington, D.C. 20555.

(r) Each licensee who is authorized to possess and/or operate a research or test reactor facility with an authorized power level greater than or equal to 500 kW thermal, under a license of the type specified in § 50.21(c), shall submit emergency plans complying with 10 CFR Part 50, Appendix E, to the Director of Nuclear Reactor Regulation for approval within one year from the effective date of this rule. Each licensee who is authorized to possess and/or operate a research reactor facility with an authorized power level less than 500 kW thermal, under a license of the type specified in § 50.21(c), shall submit emergency plans complying with 10 CFR Part 50, Appendix E, to the Director of Nuclear Reactor Regulation for approval within two years from the effective date of this amendment.

(s)(1) Each licensee who is authorized to possess and/or operate a nuclear power reactor shall submit to NRC

within 60 days of the effective date of this amendment the radiological emergency response plans of State and local governmental entities in the United States that are wholly or partially within a plume exposure pathway EPZ, as well as the plans of State governments wholly or partially within an ingestion pathway EPZ.^{1,2} Ten (10) copies of the above plans shall be forwarded to the Director of Nuclear Reactor Regulation with 3 copies to the Director of the appropriate NRC regional office. Generally, the plume exposure pathway EPZ for nuclear power reactors shall consist of an area about 10 miles (16 km) in radius and the ingestion pathway EPZ shall consist of an area about 50 miles (80 km) in radius. The exact size and configuration of the EPZs for a particular nuclear power reactor shall be determined in relation to local emergency response needs and capabilities as they are affected by such conditions as demography, topography, land characteristics, access routes, and jurisdictional boundaries. The size of the EPZs also may be determined on a case-by-case basis for gas-cooled nuclear reactors and for reactors with an authorized power level less than 250 MW thermal. The plans for the ingestion pathway EPZ shall focus on such actions as are appropriate to protect the food ingestion pathway.

(2) For operating power reactors, the licensee, State, and local emergency response plans shall be implemented by April 1, 1981, except as provided in Section IV.D.3 of Appendix E of this Part. If after April 1, 1981, the NRC finds that the state of emergency preparedness does not provide reasonable assurance that appropriate protective measures can and will be taken in the event of a radiological emergency and if the deficiencies are not corrected within four months of that finding, the Commission will determine whether the reactor shall be shut down until such deficiencies are remedied or whether other enforcement action is appropriate. In determining whether a shutdown or other enforcement action is appropriate, the Commission shall take into account, among other factors, whether the licensee can demonstrate to the Commission's satisfaction that the deficiencies in the plan are not

¹ Emergency Planning Zones (EPZs) are discussed in NUREG-0398; EPA 520/1-78-016, "Planning Basis for the Development of State and Local Government Radiological Emergency Response Plans in Support of Light Water Nuclear Power Plants," December 1978.

² If the State and local emergency response plans have been previously provided to the NRC for inclusion in the facility docket, the applicant need only provide the appropriate reference to meet this requirement.

significant for the plant in question, or that adequate interim compensating actions have been or will be taken promptly, or that there are other compelling reasons for continued operation.

(3) The NRC will base its finding on a review of the FEMA findings and determinations as to whether State and local emergency plans are adequate and capable of being implemented, and on the NRC assessment as to whether the licensee's emergency plans are adequate and capable of being implemented. Nothing in this paragraph shall be construed as limiting the authority of the Commission to take action under any other regulation or authority of the Commission or at any time other than that specified in this paragraph.

(t) A nuclear power reactor licensee shall provide for the development, revision, implementation, and maintenance of its emergency preparedness program. To this end, the licensee shall provide for a review of its emergency preparedness program at least every 12 months by persons who have no direct responsibility for implementation of the emergency preparedness program. The review shall include an evaluation for adequacy of interfaces with State and local governments and of licensee drills, exercises, capabilities, and procedures. The results of the review, along with recommendations for improvements, shall be documented, reported to the licensee's corporate and plant management, and retained for a period of five years. The part of the review involving the evaluation for adequacy of interface with State and local governments shall be available to the appropriate State and local governments.

(u) Within 60 days after the effective date of this amendment, each nuclear power reactor licensee shall submit to the NRC plans for coping with emergencies that meet standards in § 50.47(b) and the requirements of Appendix E of this Part.

4. 10 CFR Part 50, Appendix E, is amended as follows:

Appendix E—Emergency Planning and Preparedness for Production and Utilization Facilities¹

Table of Contents

I. Introduction

¹ NRC staff has developed two regulatory guides: 2.6, "Emergency Planning for Research Reactors," and 3.42, "Emergency Planning in Fuel Cycle Facilities and Plants Licensed Under 10 CFR Parts 50 and 70," and a joint NRC/FEMA report, NUREG-0654; FEMA-REP-1, "Criteria for Preparation and

Footnotes continued on next page

II. The Preliminary Safety Analysis Report
 III. The Final Safety Analysis Report
 IV. Content of Emergency Plans
 V. Implementing Procedures

I. Introduction

Each applicant for a construction permit is required by § 50.34(a) to include in the preliminary safety analysis report a discussion of preliminary plans for coping with emergencies. Each applicant for an operating license is required by § 50.34(b) to include in the final safety analysis report plans for coping with emergencies.

This appendix establishes minimum requirements for emergency plans for use in attaining an acceptable state of emergency preparedness. These plans shall be described generally in the preliminary safety analysis report and submitted as a part of the final safety analysis report.

The potential radiological hazards to the public associated with the operation of research and test reactors and fuel facilities licensed under 10 CFR Parts 50 and 70 involve considerations different than those associated with nuclear power reactors. Consequently, the size of Emergency Planning Zones ² (EPZs) for facilities other than power reactors and the degree to which compliance with the requirements of this Section and Sections II, III, IV, and V as necessary will be determined on a case-by-case basis.³

II. The Preliminary Safety Analysis Report

The Preliminary Safety Analysis Report shall contain sufficient information to ensure the compatibility of proposed emergency plans for both onsite areas and the EPZs, with facility design features, site layout, and site location with respect to such

considerations as access routes, surrounding population distributions, land use, and local jurisdictional boundaries for the EPZs in the case of nuclear power reactors as well as the means by which the standards of § 50.47(b) will be met.

As a minimum, the following items shall be described:

A. Onsite and offsite organizations for coping with emergencies and the means for notification, in the event of an emergency, of persons assigned to the emergency organizations.

B. Contacts and arrangements made and documented with local, State, and Federal governmental agencies with responsibility for coping with emergencies, including identification of the principal agencies.

C. Protective measures to be taken within the site boundary and within each EPZ to protect health and safety in the event of an accident; procedures by which these measures are to be carried out (e.g., in the case of an evacuation, who authorizes the evacuation, how the public is to be notified and instructed, how the evacuation is to be carried out); and the expected response of offsite agencies in the event of an emergency.

(D) Features of the facility to be provided for onsite emergency first aid and decontamination and for emergency transportation of onsite individuals to offsite treatment facilities.

E. Provisions to be made for emergency treatment at offsite facilities of individuals injured as a result of licensed activities.

F. Provisions for a training program for employees of the licensee, including those who are assigned specific authority and responsibility in the event of an emergency, and for other persons who are not employees of the licensee but whose assistance may be needed in the event of a radiological emergency.

G. A preliminary analysis that projects the time and means to be employed in the notification of State and local governments and the public in the event of an emergency. A nuclear power plant applicant shall perform a preliminary analysis of the time required to evacuate various sectors and distances within the plume exposure pathway EPZ for transient and permanent populations, noting major impediments to the evacuation or taking of protective actions.

H. A preliminary analysis reflecting the need to include facilities, systems, and methods for identifying the degree of seriousness and potential scope of radiological consequences of emergency situations within and outside the site boundary, including capabilities for dose projection using real-time meteorological information and for dispatch of radiological monitoring teams within the EPZs; and a preliminary analysis reflecting the role of the onsite technical support center and of the near-site emergency operations facility in assessing information, recommending protective action, and disseminating information to the public.

III. The Final Safety Analysis Report

The Final Safety Analysis Report shall contain the plans for coping with emergencies. The plans shall be an

expression of the overall concept of operation; they shall describe the essential elements of advance planning that have been considered and the provisions that have been made to cope with emergency situations. The plans shall incorporate information about the emergency response roles of supporting organizations and offsite agencies. That information shall be sufficient to provide assurance of coordination among the supporting groups and with the licensee.

The plans submitted must include a description of the elements set out in Section IV for the Emergency Planning Zones (EPZs) ² to an extent sufficient to demonstrate that the plans provide reasonable assurance that appropriate measures can and will be taken in the event of an emergency.

IV. Content of Emergency Plans

The applicant's emergency plans shall contain, but not necessarily be limited to, information needed to demonstrate compliance with the elements set forth below, i.e., organization for coping with radiation emergencies, assessment action, activation of emergency organization, notification procedures, emergency facilities and equipment, training, maintaining emergency preparedness, and recovery. In addition, the emergency response plans submitted by an applicant for a nuclear power reactor operating license shall contain information needed to demonstrate compliance with the standards described in Section 50.47(b).⁴ and they will be evaluated against those standards. The nuclear power reactor operating license applicant shall also provide an analysis of the time required to evacuate and for taking other protective actions for various sectors and distances within the plume exposure pathway EPZ for transient and permanent populations.

A. Organization

The organization for coping with radiological emergencies shall be described, including definition of authorities, responsibilities, and duties of individuals assigned to the licensee's emergency organization and the means for notification of such individuals in the event of an emergency. Specifically, the following shall be included:

1. A description of the normal plant operating organization.
2. A description of the onsite emergency response organization with a detailed discussion of:
 - a. Authorities, responsibilities, and duties of the individual(s) who will take charge during an emergency;
 - b. Plant staff emergency assignments;
 - c. Authorities, responsibilities, and duties on an onsite emergency coordinator who shall be in charge of the exchange of information with offsite authorities responsible for coordinating and implementing offsite emergency measures.
3. A description, by position and function to be performed, of the licensee's

⁴These objectives are addressed by specific criteria in NUREG-0854; FEMA-REP-1 entitled "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants for Interim Use and Comment" January 1980.

Footnotes continued from last page
 Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants for Interim Use and Comment," January 1980, to provide guidance in developing plans for coping with emergencies. Copies of these documents are available at the Commission's Public Document Room, 1717 H Street, NW., Washington, D.C. 20555. Copies of these documents may be purchased from the Government Printing Office. Information on current prices may be obtained by writing the U.S. Nuclear Regulatory Commission, Washington, D.C. 20555, Attention: Publications Sales Manager.

²EPZs for power reactors are discussed in NUREG-0398; EPA 520/1-78-016, "Planning Basis for the Development of State and Local Government Radiological Emergency Response Plans in Support of Light Water Nuclear Power Plants," December 1978. The size of the EPZs for a nuclear power plant shall be determined in relation to local emergency response needs and capabilities as they are affected by such conditions as demography, topography, land characteristics, access routes, and jurisdictional boundaries. The size of the EPZs also may be determined on a case-by-case basis for gas-cooled nuclear reactors and for reactors with an authorized power level less than 250 MW thermal. Generally, the plume exposure pathway EPZ for nuclear power plants with an authorized power level greater than 250 MW thermal shall consist of an area about 10 miles (16 km) in radius and the ingestion pathway EPZ shall consist of an area about 50 miles (80 km) in radius.

³Regulatory Guide 2.8 will be used as guidance for the acceptability of research and test reactor emergency response plans.

headquarters personnel who will be sent to the plant site to augment the onsite emergency organization.

4. Identification, by position and function to be performed, of persons within the licensee organization who will be responsible for making offsite dose projections, and a description of how these projections will be made and the results transmitted to State and local authorities, NRC, and other appropriate governmental entities.

5. Identification, by position and function to be performed, of other employees of the licensee with special qualifications for coping with emergency conditions that may arise. Other persons with special qualifications, such as consultants, who are not employees of the licensee and who may be called upon for assistance for emergencies shall also be identified. The special qualifications of these persons shall be described.

6. A description of the local offsite services to be provided in support of the licensee's emergency organization.

7. Identification of, and assistance expected from, appropriate State, local, and Federal agencies with responsibilities for coping with emergencies.

8. Identification of the State and/or local officials responsible for planning for, ordering, and controlling appropriate protective actions, including evacuations when necessary.

B. Assessment Actions

The means to be used for determining the magnitude of and for continually assessing the impact of the release of radioactive materials shall be described, including emergency action levels that are to be used as criteria for determining the need for notification and participation of local and State agencies, the Commission, and other Federal agencies, and the emergency action levels that are to be used for determining when and what type of protective measures should be considered within and outside the site boundary to protect health and safety. The emergency action levels shall be based on in-plant conditions and instrumentation in addition to onsite and offsite monitoring. These emergency action levels shall be discussed and agreed on by the applicant and State and local governmental authorities and approved by NRC. They shall also be reviewed with the State and local governmental authorities on an annual basis.

C. Activation of Emergency Organization

The entire spectrum of emergency conditions that involve the alerting or activating of progressively larger segments of the total emergency organization shall be described. The communication steps to be taken to alert or activate emergency personnel under each class of emergency shall be described. Emergency action levels (based not only on onsite and offsite radiation monitoring information but also on readings from a number of sensors that indicate a potential emergency, such as the pressure in containment and the response of the Emergency Core Cooling System) for notification of offsite agencies shall be described. The existence, but not the details, of a message authentication scheme shall be

noted for such agencies. The emergency classes defined shall include: (1) notification of unusual events, (2) alert, (3) site area emergency, and (4) general emergency. These classes are further discussed in NUREG-0654; FEMA-REP-1.

D. Notification Procedures

1. Administrative and physical means for notifying local, State, and Federal officials and agencies and agreements reached with these officials and agencies for the prompt notification of the public and for public evacuation or other protective measures, should they become necessary, shall be described. This description shall include identification of the appropriate officials, by title and agency, of the State and local government agencies within the EPZs.²

2. Provisions shall be described for yearly dissemination to the public within the plume exposure pathway EPZ of basic emergency planning information, such as the methods and times required for public notification and the protective actions planned if an accident occurs, general information as to the nature and effects of radiation, and a listing of local broadcast stations that will be used for dissemination of information during an emergency. Signs or other measures shall also be used to disseminate to any transient population within the plume exposure pathway EPZ appropriate information that would be helpful if an accident occurs.

3. A licensee shall have the capability to notify responsible State and local governmental agencies within 15 minutes after declaring an emergency. The licensee shall demonstrate that the State/local officials have the capability to make a public notification decision promptly on being informed by the licensee of an emergency condition. By July 1, 1981, the nuclear power reactor licensee shall demonstrate that administrative and physical means have been established for alerting and providing prompt instructions to the public within the plume exposure pathway EPZ. The design objective shall be to have the capability to essentially complete the initial notification of the public within the plume exposure pathway EPZ within about 15 minutes. The use of this notification capability will range from immediate notification of the public (within 15 minutes of the time that State and local officials are notified that a situation exists requiring urgent action) to the more likely events where there is substantial time available for the State and local governmental officials to make a judgment whether or not to activate the public notification system. Where there is a decision to activate the notification system, the State and local officials will determine whether to activate the entire notification system simultaneously or in a graduated or staged manner. The responsibility for activating such a public notification system shall remain with the appropriate government authorities.

E. Emergency Facilities and Equipment

Adequate provisions shall be made and described for emergency facilities and equipment, including:

1. Equipment at the site for personnel monitoring;

2. Equipment for determining the magnitude of and for continuously assessing the impact of the release of radioactive materials to the environment;

3. Facilities and supplies at the site for decontamination of onsite individuals;

4. Facilities and medical supplies at the site for appropriate emergency first aid treatment;

5. Arrangements for the services of physicians and other medical personnel qualified to handle radiation emergencies on-site;

6. Arrangements for transportation of contaminated injured individuals from the site to specifically identified treatment facilities outside the site boundary;

7. Arrangements for treatment of individuals injured in support of licensed activities on the site at treatment facilities outside the site boundary;

8. A licensee onsite technical support center and a licensee near-site emergency operations facility from which effective direction can be given and effective control can be exercised during an emergency;

9. At least one onsite and one offsite communications system; each system shall have a backup power source.

All communication plans shall have arrangements for emergencies, including titles and alternates for those in charge at both ends of the communication links and the primary and backup means of communication. Where consistent with the function of the governmental agency, these arrangements will include:

a. Provision for communications with contiguous State/local governments within the plume exposure pathway EPZ. Such communications shall be tested monthly.

b. Provision for communications with Federal emergency response organizations. Such communications systems shall be tested annually.

c. Provision for communications among the nuclear power reactor control room, the onsite technical support center, and the near-site emergency operations facility; and among the nuclear facility, the principal State and local emergency operations centers, and the field assessment teams. Such communications systems shall be tested annually.

d. Provisions for communications by the licensee with NRC Headquarters and the appropriate NRC Regional Office Operations Center from the nuclear power reactor control room, the onsite technical support center, and the near-site emergency operations facility. Such communications shall be tested monthly.

F. Training

The program to provide for (1) the training of employees and exercising, by periodic drills, of radiation emergency plans to ensure that employees of the licensee are familiar with their specific emergency response duties and (2) the participation in the training and drills by other persons whose assistance may be needed in the event of a radiation emergency, shall be described. This shall include a description of specialized initial training and periodic retraining programs to be provided to each of the following categories of emergency personnel:

a. Directors and/or coordinators of the plant emergency organization;
b. Personnel responsible for accident assessment, including control room shift personnel;

c. Radiological monitoring teams;
d. Fire control teams (fire brigades);
e. Repair and damage control teams;
f. First aid and rescue teams;
g. Medical support personnel;
h. Licensee's headquarters support personnel;

i. Security personnel.

In addition, a radiological orientation training program shall be made available to local services personnel, e.g., local Civil Defense, local law enforcement personnel, local news media persons.

The plan shall describe provisions for the conduct of emergency preparedness exercises. Exercises shall test the adequacy of timing and content of implementing procedures and methods, test emergency equipment and communication networks, test the public notification system, and ensure that emergency organization personnel are familiar with their duties. Each licensee shall exercise at least annually the emergency plan for each site at which it has one or more power reactors licensed for operation. Both full-scale and small-scale exercises shall be conducted and shall include participation by appropriate State and local government agencies as follows:

1. A full-scale exercise which tests as much of the licensee, State, and local emergency plans as is reasonably achievable without mandatory public participation shall be conducted;

a. For each site at which one or more power reactors are located and licensed for operation, at least once every five years and at a frequency which will enable each State and local government within the plume exposure pathway EPZ to participate in at least one full-scale exercise per year and which will enable each State within the ingestion pathway to participate in at least one full-scale exercise every three years.

b. For each site at which a power reactor is located for which the first operating license for that site is issued after the effective date of this amendment, within one year before the issuance of the operating license for full power, which will enable each State and local government within the plume exposure EPZ and each State within the ingestion pathway EPZ to participate.

2. The plan shall also describe provisions for involving Federal emergency response agencies in a full-scale emergency preparedness exercise for each site at which one or more power reactors are located and licensed for operation at least once every 5 years;

3. A small-scale exercise which tests the adequacy of communication links, establishes that response agencies understand the emergency action levels, and tests at least one other component (e.g., medical or offsite monitoring) of the offsite emergency response plan for licensee, State, and local emergency plans for jurisdictions within the plume exposure pathway EPZ shall be conducted at each site at which one or more power reactors are located and

licensed for operation each year a full-scale exercise is not conducted which involves the State(s) within the plume exposure pathway EPZ.

All training, including exercises, shall provide for formal critiques in order to identify weak areas that need corrections. Any weaknesses that are identified shall be corrected.

G. Maintaining Emergency Preparedness

Provisions to be employed to ensure that the emergency plan, its implementing procedures, and emergency equipment and supplies are maintained up to date shall be described.

H. Recovery

Criteria to be used to determine when, following an accident, reentry of the facility would be appropriate or when operation could be resumed shall be described.

V. Implementing Procedures

No less than 180 days prior to scheduled issuance of an operating license for a nuclear power reactor or a license to possess nuclear material, 3 copies of each of the applicant's detailed implementing procedures for its emergency plan shall be submitted to the Director of the appropriate NRC Regional Office with 10 copies to the Director of Nuclear Reactor Regulation or, if appropriate, the Director of Nuclear Material Safety and Safeguards. In cases where a decision on an operating license is scheduled less than one year after the effective date of this rule, such implementing procedures shall be submitted as soon as practicable but before full power operation is authorized. Prior to March 1, 1981, licensees who are authorized to operate a nuclear power facility shall submit 3 copies each of the licensee's emergency plan implementing procedures to the Director of the appropriate NRC Regional Office with 10 copies to the Director of Nuclear Reactor Regulation. Three copies each of any changes to maintain these implementing procedures up to date shall be submitted to the same NRC Regional Office with 10 copies to the Director of Nuclear Reactor Regulation or, if appropriate, the Director of Nuclear Material Safety and Safeguards within 30 days of such changes.

PART 70—DOMESTIC LICENSING OF SPECIAL NUCLEAR MATERIAL

2. Section 70.32 is amended by adding paragraph (i) to read as follows:

§ 70.32 Conditions of licenses.

(i) Licensees required to submit emergency plans in accordance with § 70.22(i) shall follow and maintain in effect emergency plans approved by the Commission. The licensee may make changes to the approved plans without Commission approval only if such changes do not decrease the effectiveness of the plans and the plans, as changed, continue to meet the requirements of Appendix E, Section IV, 10 CFR Part 50. The licensee shall

furnish the Director of Nuclear Material Safety and Safeguards, U.S. Nuclear Regulatory Commission, Washington, D.C. 20555, with a copy to the appropriate NRC Regional Office specified in Appendix D, Part 20 of this Chapter, each change within six months after the change is made. Proposed changes that decrease the effectiveness of the approved emergency plan shall not be implemented without prior application to and prior approval by the Commission.

(Sec. 161b., i., and o., Pub. L. 83-703, 68 Stat. 948 (42 U.S.C. 2201); Sec. 201, as amended, Pub. L. 93-438, 88 Stat. 1242, Pub. L. 94-79, 89 Stat. 413 (42 U.S.C. 5341))

Dated at Washington, D.C. this 11th day of August 1980.

For the Nuclear Regulatory Commission.
Samuel J. Chilk,

Secretary of the Commission.

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10 CFR Part 50

Emergency Planning: Negative Declaration; Finding of no Significant Impact for Effective Rule Changes

AGENCY: U.S. Nuclear Regulatory Commission.

ACTION: Final negative declaration; finding of no significant impact.

SUMMARY: The Nuclear Regulatory Commission's regulations require that the environmental impact of certain regulatory actions, including substantive amendments to 10 CFR Part 50, be evaluated to determine if an environmental impact statement should be prepared. If it is determined an environmental impact statement need not be prepared, a negative declaration will be issued. The NRC has evaluated the environmental impact of the proposed changes to Part 50 dealing with emergency planning requirements for nuclear power plants (published elsewhere in this issue), and has determined that the rule changes will not have a significant impact on the human environment. Therefore, an environmental impact statement will not be prepared, and a negative declaration is being issued.

DATES: The rule changes for emergency planning will become effective November 3, 1980.

ADDRESSES: Copies of the Final Environmental Assessment, NUREG-0685, and the comments received by the Commission may be examined in the Commission's Public Document Room at 1717 H Street NW., Washington, D.C.

and at local Public Document Rooms. Single copies of the final Environmental Assessment (NUREG-0885) are available for purchase through the NRC GPO sales program for \$4.25 (USNRC, Attention Sales Manager, Washington, D.C. 20555).

FOR FURTHER INFORMATION CONTACT: Michael T. Jamgochian, Office of Standards Development, U.S. Nuclear Regulatory Commission, Washington, D.C. 20555, Telephone: (301) 443-5966.

SUPPLEMENTARY INFORMATION: On January 21, 1980 the Nuclear Regulatory Commission published a "Draft Negative Declaration; Finding of No Significant Impact" (45 FR 3913; January 21, 1980) for proposed changes to 10 CFR Part 50, §§ 50.33, 50.47, 50.54 and Appendix E that deal with emergency planning requirements for nuclear power plants (44 FR 75167, December 19, 1979). A draft Environmental Assessment accompanied the draft Negative Declaration. The comment period ended on February 18, 1980.

Sixteen sets of comments were submitted and have been analyzed. Although all 16 commenters felt that the draft Environmental Assessment was inadequate to support the Finding of No Significant Impact, the staff analysis does not support this view. The commenters suggested that some points in the draft Environmental Assessment were in error, some required much more detailed discussion, and some points had been ignored. The errors have been corrected and do not significantly affect the earlier conclusion. The levels of detail and the omissions are generally related to the penalties associated with noncompliance with the rule. The staff originally judged that invocations of the noncompliance penalties (i.e., nuclear power plant shutdown) would be infrequent and of short duration and the associated impacts would thus be insignificant. Commenters asserted that there will be frequent and long-term shutdowns which will have severe impacts which would require detailed consideration in an Environmental Impact Statement. The staff analysis has supported the judgment of infrequent, short-term shutdowns and thus concludes that no additional detailed studies are necessary.

Minor revisions have been made in the environmental assessment reflecting comments received, but its conclusions have not been altered. Based on this assessment, a final determination has been made by the Director, Office of Standards Development, that the proposed rule changes will not have a significant impact on the human environment and, therefore, that an

environmental impact statement will not be prepared for these rule changes.

Analysis of Comments

The groups that submitted comments are identified on the Table together with their principal comments. No comments were received from State or local governments, other Federal agencies, or public interest groups.

The main point of each set of comments was that an Environmental Impact Statement should be prepared for the rule changes and that the Environmental Assessment "... inadequately addresses the environmental impact of the Emergency Planning Proposed Rule and the economic and social impacts on U.S. industry of long-term or permanent premature shutdowns of nuclear plants" (AEP). The comments have been reconstructed into 14 general criticisms, which have been analyzed for their relevance to the validity of the conclusions in the "Draft Negative Declaration; Finding of No Significant Impact."

One matter warrants additional mention here. An assumption was made in preparation of the DEA that shutdowns of nuclear power plants as a result of actions taken under these rule changes would be infrequent and of short duration. This assumption is critical to the decision that an Environmental Impact Statement should not be prepared. The basis for this assumption was that, since State and local authorities have the responsibility, in common with the NRC, to protect public health and safety and are concerned with meeting the energy needs of their citizens, it is likely that they will cooperate to ensure the continued safe operation or timely commencement of safe operation of nuclear generation capability within their jurisdiction. The only significant adverse reaction by the State and local governments that must bear this burden has been that complications in funding of State programs and lead time for equipment acquisition might make it difficult to completely satisfy all of the planning and preparedness requirements by the date set forth in the proposed rule changes. As a direct result of this, the deadline for plans and implementation has been extended to April 1, 1981, and the deadline for having warning systems in place has been extended to July 1, 1981. These extensions should be sufficient in most cases.

It should also be noted that the Commission has chosen the alternative that requires Commission action to initiate a shutdown. Conditions are

specified in the regulation that the Commission will use in each case to determine whether a shutdown is warranted. When considered together, the lack of any significant adverse comment from State and local governments, the necessity for Commission action before a plant will be shut down, and the conditions for whether a shutdown is warranted, all argue convincingly that the assumption that shutdowns will be infrequent and of short duration is sound. Thus, the assumption is retained in the final Environmental Assessment (NUREG-0885) and the impacts of extended shutdowns are not considered valid impacts of these rule changes.

The 14 reconstructed general comments and a discussion of each follow:

1. *Three commenters (see Table) contend that alternatives to the proposed rule changes are inadequately addressed. They specifically mention alternative ways of achieving the same end such as proposing legislation.*

In view of the existing safety record of the nuclear industry and the lack of effective preparation for the TMI accident, the Commission had the following three alternatives from which to choose:

A. The Commission could take no immediate action itself while encouraging other parties, i.e., the Congress, other Federal Agencies, the States, and the utilities themselves to take effective action. This "no action" alternative would be counter to the Commission's legislative mandate to protect public health and safety. In fact, the TMI accident was a clear indication that this "urging without requiring" emergency preparedness had proved to be ineffective. This alternative clearly could not stand in the face of the Commission's responsibility in this area.

B. The Commission is a regulatory agency and has as one of its chief tools the authority to issue regulations that bind those parties that it regulates. If an effective method for achieving protection of public health and safety is available through promulgation of regulations with specific requirements and penalties and conditions governing those requirements and penalties, this should be the proper way for the Commission to proceed.

C. If the Commission judged that danger to public health and safety was significant and imminent because of continued operation of existing plants while effective regulations are developed, it had the authority to impose immediate shutdowns until a solution could be found. The safety record of nuclear power, including the

TMI accident, does not support an industry-wide judgment of imminent, significant danger. However, potential does exist for significant harm to the public in the event of a severe accident and the events at TMI suggest that plans must be made to account for this potential problem. Notwithstanding this potential, given the likelihood of an accident requiring off-site emergency protective measures, immediate industry-wide shutdown and the attendant severe long-term impacts are not warranted.

Alternatives A and C are clearly unacceptable. The discussion of alternatives in the Final Environmental Assessment has not been changed from that in the Draft Environmental Assessment.

2. Seven commenters (see Table) assert that the impacts of shutdowns are underestimated and that shutdowns of multiple unit plants or several in the same State were not considered.

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[7590-01]

Matrix Display of Commenters and Major Comments

Commenters ¹	AIF	Yank. At.	Com. Ed. ²	Con. Ed.	AEP	EEI	LLM	NU	PASNY	B&E	D & L	Duke	SPP&T	DOE	LNRA&T
Major Comments															
1. Alternatives inadequately addressed	X	X													X
2. Impacts of shutdowns underestimated (costs)	X	X		X			Endorses EEI		Endorses EEI	X			X	X	X
3. Health effects of fossil substitution underestimated	X			X			Endorses EEI		Endorses EEI					X	X
4. Challenge assumption of infrequent, short-duration shutdowns	X	X		X	X	X	X		X				X		X
5. Judgement on State cooperation unsubstantiated	X	X	X	X	X									X	X
6. Long-term impacts not addressed	X			X	X					X					X
7. Psychological and physical risks of false alarms not evaluated	X	X								X		X		X	X
8. Use of fuel-mix improper, variation in cost of replacement power			X		X					X		X		X	
9. Significant impacts due to linkage between approval and continued operation		X		X		X	X		X						
10. Proposed rule prior to FEMA		X									X				
11. Costs too low (15 minute warning system not included)		X						X			X	X	X	X	X
12. Decisions granting exemptions or resumption of operation should be classified as categorical exclusions under Commission's NEPA regulations			X												
13. No consideration of costs to utilities											X	X			
14. No consideration of plants under construction															X

¹Key to Commenters

AIF - Atomic Industrial Forum

Yank. At. - Yankee Atomic Electric Co.

Com. Ed. - Commonwealth Edison²

Con. Ed. - Consolidated Edison Company of New York, Inc.

AEP - American Electric Power Service Corporation

EEI - Edison Electric Institute

LLM - LeBoeuf, Lamb, Leiby & MacRae (for five utilities)

NU - Northeast Utilities

PASNY - Power Authority of the State of New York

B&E - Baltimore Gas and Electric

D & L - DeBevoise & Liberman (for three utilities)

Duke - Duke Power Company

SPP&T - Shaw, Pittman, Potts & Trowbridge (for eight utilities)

DOE - U. S. Department of Energy

LNRA&T - Lowenstein, Newman, Reis, Axelrod & Toll (for two utilities)

The DEA was prepared with the understanding that ever increasing fuel prices make it difficult to make stable predictions of the costs of replacement power. While individual values of replacement costs may be in error, the upper end of the range of costs of replacement power, which is compared in the Environmental Assessment to the costs of compliance, is only changed by about 36% when the heat rate is changed as suggested. The response to comment eleven indicates that the costs of compliance were also underestimated. The relative comparison of these two costs was used to demonstrate the strong economic incentive that exists for all parties to strive for effective emergency planning and preparedness. The staff agrees that the net plant heat rate assumed in the DEA is low and therefore changed the assumed heat rate from 9,400 Btu/kWh to 11,000 Btu/kWh. Accordingly, the cost figures have been modified in the Final Environmental Assessment; but these modifications do not alter the conclusions of the Environmental Assessment.

The question of multiple-plant shutdowns because of a common reason, i.e., an unacceptable State plan or multiple units on a site where the local plan is unacceptable, is a more difficult problem. The State plans are only a part of the overall Federal Emergency Management Agency (FEMA) program to enhance the ability of State governments to handle emergencies. The economic incentive for the utilities to help the States in every way possible should result in the preparation of plans and equipment for a nuclear plant emergency that will be a sound, significant contribution to the overall capability of a State to handle many different kinds of emergencies. The provision of conditions that permit issuance of an operating license or continuation of operation, the extension of the compliance date and deadline for warning systems to be in place, and the record of cooperation from the States up to the present time make it unlikely that any State's program will be so deficient that shutdown of all plants in the State will be required.

The potential that an unsatisfactory local plan might result in the shutdown of all units on a specific site appears to be significantly greater. Depending on the size and number of the units involved, the incentive of the utility for aiding the local governments is also greater. The potential magnitude of the impact of shutdown in these cases is two to three times greater than for the single unit case, and this determination has been added to the Environmental

Assessment. In any case, it would appear that whether these impacts, if severe enough, constitute "other compelling reasons" to permit continued operation will be determined in the individual reviews.

3. Four groups comment that health effects of fossil substitution are underestimated in the draft Environmental Assessment and that other effects are ignored.

The critical assumption in the draft and final Environmental Assessment is that shutdowns will be infrequent and of short duration. In such a case, the fossil generating capacity is simply that which is available for normal replacement power during refueling and maintenance outages and would probably be used in periods of peak demand until the utility phases it out of the generating system completely. (The impacts are thus ones that occur anyway, but at a different time. Short, infrequent shutdowns will only change the time period for suffering an impact that will most likely be felt eventually anyway.) For such short-term replacement, no new plants will be built. The draft and final Environmental Assessment accepts these impacts as a consequence of infrequent and brief shutdowns. (A more accurate analysis might conclude that there is zero cumulative impact because the useful life of the replacement capability is unaltered.) The discussions in the Final Environmental Assessment are unaltered on this subject.

4. Nine commenters challenged the assumption that shutdowns would be infrequent and of short duration and questioned the lack of treatment of the availability of replacement capacity.

The assumption that shutdowns will be infrequent and of short duration is critical to the validity of the Environmental Assessment. At the time when the Draft Environmental Assessment was prepared, this assumption was based on the assertion that State and local governments (having in common with NRC the responsibility to protect public health and safety) will cooperate to provide fully for protection of the public. Since that time, the Commission, in cooperation with FEMA, has been working diligently to help State and local governments develop satisfactory emergency plans and programs. The response of the State and local governments has confirmed the validity of the earlier assumption. In addition, no State or local government provided any comment on the Draft Environmental Assessment, thus indicating at least tacit agreement with the basis for the assumption.

Since the basis for the assumption of infrequent shutdowns has not received substantive challenge from the parties directly involved, but there has instead been activity that tends to confirm the assumption, it will remain as a fundamental assumption of the final Environmental Assessment.

The availability of replacement capacity also hinges on this assumption. Part of the purpose of reserve capacity is replacement during plant outages. As long as shutdowns are infrequent and of short duration, they should fit into this normal pattern of utilization of replacement capacity. No additional discussions of this topic have been prepared for the final Environmental Assessment.

5. Seven commenters contend the judgment that "... it is likely that the States will cooperate to assure the continued safe operation or timely commencement of safe operation of nuclear generation capability within their jurisdiction" is unsubstantiated.

While this assumption was made in the absence of first-hand information, the experience of the Commission since December 1979, in attempting to work with state and local government officials, has confirmed the accuracy of this assumption.

6. Five commenters assert that impacts of long-term shutdowns are not addressed.

The assumption that shutdowns will be infrequent and of short duration defines the scope of this Environmental Assessment. As described above, long-term shutdowns are not the expected result of these rule changes. The goal of these rule changes is timely implementation of adequate emergency plans and programs. The draft and final Environmental Assessment address the impacts of this action based on the expected consequences and practical considerations of implementation of the provisions of the rule changes. No analysis of the effects of long-term shutdowns has been added to the final Environmental Assessment.

7. Six commenters contend that psychological and physical risks to the public of false alarms are not evaluated.

The Emergency Action Level Guidelines (NUREG-0610) recommend notification of the public when a "Site Emergency" has been declared. The expected frequency of an event of this type is predicted to be 1 in 100 to 1 in 5,000 per reactor per year. The high end of this range indicates that two such warnings might occur over the effective life (40 years) for every five units. The low end indicates one event over the life of 125 units. Far from causing excessive psychological and physical risks, this

kind of behavior should lead to a more accurate public perception of the true incidence of risk from nuclear power facilities and a more practical and considered response to an emergency when one occurs. No change has been made in the final Environmental Assessment.

8. *Five commenters assert that the use of the mix of fuels already in use in the State is a poor predictor of what would be the fuel replacement capacity for a specific plant shutdown.*

A generic assessment must make some averaging assumptions or become hopelessly lost in detail. In this case, the commenters are correct that this is a "gross assumption." It is, however, sufficient to establish the range of costs for replacement power, which is the way the detailed information was used. No change has been made in the mix of fuels used to generically assess the range of costs of replacement power.

9. *Five commenters observe that all of the significant impacts are due to linkage between adequacy of emergency plans and continued plant operation.*

These commenters agree that the impacts of compliance are insignificant and that if there were no penalty associated with inadequate emergency preparedness then an Environmental Assessment or no Environmental Assessment would be appropriate. The thrust of the rule is to protect the public through adequate emergency planning. The thrust of the shutdown provision is to protect the public in the event that adequate provision has not been and is not being made to provide adequate emergency planning and preparedness.

The decision of how the public should be protected has been made, i.e., either emergency planning and preparedness is adequate or a plant may be placed in a condition of safe shutdown. The State and local authorities have the responsibility to determine which option is in the best interest of their citizens. The linkage remains in the effective rule changes. No additional discussion has been provided in the final Environmental Assessment.

10. *Two commenters observed that the proposed rule was issued prior to the expanded role of FEMA in emergency planning for nuclear power plants.*

The NRC and FEMA are working closely to establish and carry out their respective roles in emergency planning for nuclear power plants. The effective rule has been changed to reflect this change in relationship between the two agencies. However, the substantive provisions of the rule have not changed, only the parties responsible for specific actions.

11. *Seven commenters assert that the costs of implementation are too low and that there may not be enough time allowed to achieve adequacy in all areas of emergency planning and preparedness.*

The draft Environmental Assessment based its estimates of cost of implementation on information contained in "Beyond Defense in Depth: Cost and Funding of State and Local Government Radiological Emergency Response Plans and Preparedness in Support of Commercial Nuclear Power Stations," NUREG-0553, October 1979. This report did not consider the costs of a warning system that would effectively warn everyone within 10 miles within 15 minutes of the time when the decision to warn the public is made. The cost estimates in the draft Environmental Assessment thus do not include the costs of 15-minute notification. The estimates provided by the commenters have been used to revise the cost estimate in the final Environmental Assessment. It should be noted that all cost figures are approximate and are only intended to give an estimate of the normal magnitude of costs and fees associated with building and operating a nuclear power plant. Significant variations from these costs for individual cases should be expected.* These changes do not affect the earlier conclusions of the draft Environmental Assessment.

In response to comments that more time might be needed, the deadline for plans and implementation to be completed has been extended to April 1, 1981, and the deadline for installation of warning systems has been extended to July 1, 1981 to allow for procurement problems. Appropriate changes have been made in the Environmental Assessment but the earlier conclusions remain unaffected.

12. *One commenter suggested that decisions on shutdowns, allowing continued operation despite inadequate plans, or the resumption of operation after a shutdown should be listed in 10 CFR Part 51 as a categorical exclusion.*

The categorical exclusions in Part 51 are those Commission actions that have been judged as a class not to have any significant environmental impact and thus have been excluded from further consideration under those portions of the Commission's regulations that

implement the National Environmental Policy Act of 1969. The Commission will consider this as a comment on the ongoing rulemaking on 10 CFR Part 51 (45 FR 13739).

13. *Two commenters noted that no consideration was given to the costs to the utilities of those portions of the rule changes that upgrade previous onsite requirements.*

This oversight has been corrected. While these costs added a significant increment to the total cost of implementation, this total cost is still low compared to the reference costs of (1) replacement power, (2) tax and fee burden, and (3) capital investment. While several of the cost figures in the final Environmental Assessment have been revised upward, the comparison of these costs has remained unchanged and the conclusions of the Environmental Assessment are unchanged.

14. *One commenter observed that there is no consideration given to plants under construction.*

The cost estimates were forecast for all plants scheduled to be operating by the time the rule was to become effective. To go beyond this period would only complicate the estimates with future costs of greater uncertainty. The purpose here was to present an approximation of the relative significance of the cost impacts to determine whether a more detailed analysis is necessary. The relative magnitude of these costs is well established by the information at hand and these are clearly sufficient to support a decision without the preparation on environmental impact statement.

Dated at Bethesda, Maryland, this 6th day of August 1980.

For the Nuclear Regulatory Commission,
Robert B. Minogue,
Director, Office of Standards Development,
U.S. Nuclear Regulatory Commission.

[FR Doc. 80-25248 Filed 8-18-80; 8:45 am]

BILLING CODE 7590-01-M

* Northeast Utilities indicated costs as much as 2.5 times those quoted in the Environmental Assessment but also cited unusual complications such as large numbers of local governments that escalated their costs. Since this single estimate was not confirmed by other State or utility commenters, the values were considered beyond the usual range of costs.

which maintenance of a license is predicated, with regard to preparation, review, conduct, participation, evaluation, meetings and reports.

(b) Interim findings. Where the NRC seeks from FEMA under the FEMA/NRC MOU an interim finding of the status of radiological emergency planning and preparedness at a particular time for a nuclear power plant, FEMA shall assess a fee to the licensee for providing this service. The provision of this service consists of making a determination whether the plans are adequate to protect the health and safety of the public living in the vicinity of the nuclear power facility by providing reasonable assurance that appropriate protective measures can be taken off-site in the event of a radiological emergency and that such plans are capable of being implemented.

(c) NRC utility plan submissions. Fees will be charged for all FEMA but not other Federal agency activities related to such services, including but not limited to the following:

(1) Development of exercise objectives and scenarios, preexercise logistics, exercise conduct and participation, evaluation and post-exercise meetings and reports.

(2) Notice and conduct of public meeting.

(3) Regional finding and determination of adequacy of plans and preparedness followed by review by FEMA Headquarters resulting in final FEMA determination of adequacy of plans and preparedness.

(4) Remedial exercise, medical drill, or any other exercise or drill upon which maintenance of a license is predicated, with regard to preparation, review, conduct, participation, evaluation, meetings and reports.

(d) Utility certification submission review. When a licensee seeks Federal assistance within the framework of 44 CFR part 352 due to the decline or failure of a State or local government to adequately prepare an emergency plan, FEMA shall process the licensee's certification and make the determination whether a decline or fail situation exists. Fees will be charged for services rendered in making the determination. Upon the determination that a decline or fail situation does exist, any serv-

ices provided or secured by FEMA consisting of assistance to the licensee, as described in 44 CFR part 352, will have a fee charged for such services.

(e) FEMA participation in site-specific NRC adjudicatory proceedings and any other site-specific legal costs. Where FEMA participates in NRC licensing proceedings and any related court actions to support FEMA findings as a result of its review and approval of offsite emergency plans and preparedness, or provides legal support for any other site specific FEMA activities comprised in this rule, fees will be charged to the licensee for such participation.

(f) Rendering technical assistance. Where FEMA is requested by a licensee to provide any technical assistance, or where a State or local government requests technical assistance in order to correct an inadequacy identified as a result of a biennial exercise or any other drill or exercise upon which maintenance of a license is predicated, FEMA will charge such assistance to the licensee for the provision of such service.

§353.7 Failure to pay.

In any case where there is a dispute over the FEMA bill or where FEMA finds that a licensee has failed to pay a prescribed fee required under this part, procedures will be implemented in accordance with 44 CFR part 11 subpart C to effectuate collections under the Debt Collection Act of 1982 (31 U.S.C. 3711 et seq.).

APPENDIX A TO PART 353—MEMORANDUM OF UNDERSTANDING BETWEEN FEDERAL EMERGENCY MANAGEMENT AGENCY AND NUCLEAR REGULATORY COMMISSION

The Federal Emergency Management Agency (FEMA) and the Nuclear Regulatory Commission (NRC) have entered into a new Memorandum of Understanding (MOU) Relating To Radiological Emergency Planning and Preparedness. This supersedes a memorandum entered into on November 1, 1980 (published December 16, 1980, 45 FR 82713), revised April 9, 1985 (published April 18, 1985, 50 FR 15485), and published as Appendix A to 44 CFR part 353. The substantive changes in the new MOU are: (1) Self-initiated review by the

NRC; (2) Early Site Permit process; (3) adoption of FEMA exercise time-frames; (4) incorporation of FEMA definition of exercise deficiency; (5) NRC commitment to work with licensees in support of State and local governments to correct exercise deficiencies; (6) correlation of FEMA actions on withdrawal of approvals under 44 CFR part 350 and NRC enforcement actions; and (7) disaster-initiated reviews in situations that affect offsite emergency infrastructures. The text of the MOU follows.

MEMORANDUM OF UNDERSTANDING BETWEEN
NRC AND FEMA RELATING TO RADIOLOGICAL
EMERGENCY PLANNING AND PREPAREDNESS

I. Background and Purposes

This Memorandum of Understanding (MOU) establishes a framework of cooperation between the Federal Emergency Management Agency (FEMA) and the U.S. Nuclear Regulatory Commission (NRC) in radiological emergency response planning matters so that their mutual efforts will be directed toward more effective plans and related preparedness measures at and in the vicinity of nuclear reactors and fuel cycle facilities which are subject to 10 CFR part 50, appendix E, and certain other fuel cycle and materials licensees which have potential for significant accidental offsite radiological releases. The memorandum is responsive to the President's decision of December 7, 1979, that FEMA will take the lead in offsite planning and response, his request that NRC assist FEMA in carrying out this role, and the NRC's continuing statutory responsibility for the radiological health and safety of the public.

On January 14, 1980, the two agencies entered into a "Memorandum of Understanding Between NRC and FEMA to Accomplish a Prompt Improvement in Radiological Emergency Preparedness," that was responsive to the President's December 7, 1979, statement. A revised and updated Memorandum of Understanding became effective November 1, 1980. The MOU was further revised and updated on April 9, 1985. This MOU is a further revision to reflect the evolving relationship between NRC and FEMA and the experience gained in carrying out the provisions of the previous MOU's. This MOU supersedes these two earlier versions of the MOU.

The general principles agreed to in the previous MOU's and reaffirmed in this MOU, are as follows: FEMA coordinates all Federal planning for the offsite impact of radiological emergencies and takes the lead for assessing offsite radiological emergency response plans¹ and preparedness, makes find-

ings and determinations as to the adequacy and capability of implementing offsite plans, and communicates those findings and determinations to the NRC. The NRC reviews those FEMA findings and determinations in conjunction with the NRC onsite findings for the purpose of making determinations on the overall state of emergency preparedness. These overall findings and determinations are used by NRC to make radiological health and safety decisions in the issuance of licenses and the continued operation of licensed plants to include taking enforcement actions as notices of violations, civil penalties, orders, or shutdown of operating reactors. This delineation of responsibilities avoids duplicative efforts by the NRC staff in offsite preparedness matters. However, if FEMA informs the NRC that an emergency, unforeseen contingency, or other reason would prevent FEMA from providing a requested finding in a reasonable time, then, in consultation with FEMA, the NRC might initiate its own review of offsite emergency preparedness.

A separate MOU dated October 22, 1980, deals with NRC/FEMA cooperation and responsibilities in response to an actual or potential radiological emergency. Operations Response Procedures have been developed that implement the provisions of the Incident Response MOU. These documents are intended to be consistent with the Federal Radiological Emergency Response Plan which describes the relationships, roles, and responsibilities of Federal Agencies for responding to accidents involving peacetime nuclear emergencies. On December 1, 1991, the NRC and FEMA also concluded a separate MOU in support of Executive Order 12657 (FEMA Assistance in Emergency Preparedness Planning at Commercial Nuclear Power Plants).

II. Authorities and Responsibilities

FEMA-Executive Order 12148 charges the Director, FEMA, with the responsibility to " * * * establish Federal policies for, and coordinate, all civil defense and civil emergency planning, management, mitigation, and assistance functions of Executive agencies" (Section 2-101) and " * * * represent the President in working with State and local governments and the private sector to stimulate vigorous participation in civil emergency preparedness, mitigation, response, and recovery programs" (Section 2-104.).

On December 7, 1979, the President, in response to the recommendations of the Kemeny Commission on the Accident at

mitted to FEMA under its rule (44 CFR Part 350), and as noted in 44 CFR 350.3(f), may also be based on plans currently available to FEMA or furnished to FEMA through the NRC/FEMA Steering Committee.

¹Assessments of offsite plans may be based on State and local government plans sub-

Three Mile Island, directed that FEMA assume lead responsibility for all offsite nuclear emergency planning and response.

Specifically, the FEMA responsibilities with respect to radiological emergency preparedness as they relate to NRC are:

1. To take the lead in offsite emergency planning and to review and assess offsite emergency plans and preparedness for adequacy.

2. To make findings and determinations as to whether offsite emergency plans are adequate and can be implemented (e.g., adequacy and maintenance of procedures, training, resources, staffing levels and qualifications, and equipment). Notwithstanding the procedures which are set forth in 44 CFR part 350 for requesting and reaching a FEMA administrative approval of State and local plans, findings, and determinations on the current status of emergency planning and preparedness around particular sites, referred to as interim findings, will be provided by FEMA for use as needed in the NRC licensing process. Such findings will be provided by FEMA on mutually agreed to schedules or on specific NRC request. The request and findings will normally be by written communications between the co-chairs of the NRC/FEMA Steering Committee. An interim finding provided under this arrangement will be an extension of FEMA's procedures for review and approval of offsite radiological emergency plans and preparedness set forth in 44 CFR part 350. It will be based on the review of currently available plans and, if appropriate, joint exercise results related to a specific nuclear power plant site.

If the review involves an application under 10 CFR part 52 for an early site permit, the NRC will forward to FEMA pertinent information provided by the applicant and consult with FEMA as to whether there is any significant impediment to the development of offsite emergency plans. As appropriate, depending upon the nature of information provided by the applicant, the NRC will also request that FEMA determine whether major features of offsite emergency plans submitted by the applicant are acceptable, or whether offsite emergency plans submitted by the applicant are adequate, as discussed below.

An interim finding based only on the review of currently available offsite plans will include an assessment as to whether these plans are adequate when measured against the standards and criteria of NUREG-0654/FEMA-REP-1, and, pending a demonstration through an exercise, whether there is reasonable assurance that the plans can be implemented. The finding will indicate one of the following conditions: (1) Plans are adequate and there is reasonable assurance that they can be implemented with only limited or no corrections needed; (2) plans are adequate, but before a determination can be made as to

whether they can be implemented, corrections must be made to the plans or supporting measures must be demonstrated (e.g., adequacy and maintenance of procedures, training, resources, staffing levels and qualifications, and equipment) or (3) plans are inadequate and cannot be implemented until they are revised to correct deficiencies noted in the Federal review.

If, in FEMA's view, the plans that are available are not completed or are not ready for review, FEMA will provide NRC with a status report delineating milestones for preparation of the plan by the offsite authorities as well as FEMA's actions to assist in timely development and review of the plans.

An interim finding on preparedness will be based on review of currently available plans and joint exercise results and will include an assessment as to (1) whether offsite emergency plans are adequate as measured against the standards and criteria of NUREG-0654/FEMA-REP-1 and (2) whether the exercise(s) demonstrated that there is reasonable assurance that the plans can be implemented.

An interim finding on preparedness will indicate one of the following conditions: (1) There is reasonable assurance that the plans are adequate and can be implemented as demonstrated in an exercise; (2) there are deficiencies that must be corrected; or (3) FEMA is undecided and will provide a schedule of actions leading to a decision.

3. To assume responsibility, as a supplement to State, local, and utility efforts, for radiological emergency preparedness training of State and local officials.

4. To develop and issue an updated series of interagency assignments which delineate respective agency capabilities and responsibilities and define procedures for coordination and direction for emergency planning and response. [Current assignments are in 44 CFR part 351, March 11, 1982. (47 FR 10758)]

NRC-The Atomic Energy Act of 1954, as amended, requires that the NRC grant licenses only if the health and safety of the public is adequately protected. While the Atomic Energy Act does not specifically require emergency plans and related preparedness measures, the NRC requires consideration of overall emergency preparedness as a part of the licensing process. The NRC rules (10 CFR 50.33, 50.34, 50.47, 50.54, and appendix E to 10 CFR part 50, and 10 CFR part 52) include requirements for the licensee's emergency plans.

Specifically, the NRC responsibilities for radiological emergency preparedness are:

1. To assess licensee emergency plans for adequacy. This review will include organizations with whom licensees have written agreements to provide onsite support services under emergency conditions.

2. To verify that licensee emergency plans are adequately implemented (e.g., adequacy and maintenance of procedures, training, resources, staffing levels and qualifications, and equipment).

3. To review the FEMA findings and determinations as to whether offsite plans are adequate and can be implemented.

4. To make radiological health and safety decisions with regard to the overall state of emergency preparedness (i.e., integration of emergency preparedness onsite as determined by the NRC and offsite as determined by FEMA and reviewed by NRC) such as assurance for continued operation, for issuance of operating licenses, or for taking enforcement actions, such as notices of violations, civil penalties, orders, or shutdown of operating reactors.

III. Areas of Cooperation

A. NRC Licensing Reviews

FEMA will provide support to the NRC for licensing reviews related to reactors, fuel facilities, and materials licensees with regard to the assessment of the adequacy of offsite radiological emergency response plans and preparedness. This will include timely submittal of an evaluation suitable for inclusion in NRC safety evaluation reports.

Substantially prior to the time that a FEMA evaluation is required with regard to fuel facility or materials license review, NRC will identify those fuel and materials licensees with potential for significant accidental offsite radiological releases and transmit a request for review to FEMA as the emergency plans are completed.

FEMA routine support will include providing assessments, findings and determinations (interim and final) on offsite plans and preparedness related to reactor license reviews. To support its findings and determinations, FEMA will make expert witnesses available before the Commission, the NRC Advisory Committee on Reactor Safeguards, NRC hearing boards and administrative law judges, for any court actions, and during any related discovery proceedings.

FEMA will appear in NRC licensing proceedings as part of the presentation of the NRC staff. FEMA counsel will normally present FEMA witnesses and be permitted, at the discretion of the NRC licensing board, to cross-examine the witnesses of parties, other than the NRC witnesses, on matters involving FEMA findings and determinations, policies, or operations; however, FEMA will not be asked to testify on status reports. FEMA is not a party to NRC proceedings and, therefore, is not subject to formal discovery requirements placed upon parties to NRC proceedings. Consistent with available resources, however, FEMA will respond informally to discovery requests by parties. Specific assignment of professional respon-

sibilities between NRC and FEMA counsel will be primarily the responsibility of the attorneys assigned to a particular case. In situations where questions of professional responsibility cannot be resolved by the attorneys assigned, resolution of any differences will be made by the General Counsel of FEMA and the General Counsel of the NRC or their designees. NRC will request the presiding Board to place FEMA on the service list for all litigation in which it is expected to participate.

Nothing in this MOU shall be construed in any way to diminish NRC's responsibility for protecting the radiological health and safety of the public.

B. FEMA Review of Offsite Plans and Preparedness

NRC will assist in the development and review of offsite plans and preparedness through its membership on the Regional Assistance Committees (RAC). FEMA will chair the Regional Assistance Committees. Consistent with NRC's statutory responsibility, NRC will recognize FEMA as the interface with State and local governments for interpreting offsite radiological emergency planning and preparedness criteria as they affect those governments and for reporting to those governments the results of any evaluation of their radiological emergency plans and preparedness.

Where questions arise concerning the interpretation of the criteria, such questions will continue to be referred to FEMA Headquarters, and when appropriate, to the NRC/FEMA Steering Committee to assure uniform interpretation.

C. Preparation for and Evaluation of Joint Exercises

FEMA and NRC will cooperate in determining exercise requirements for licensees, and State and local governments. They will also jointly observe and evaluate exercises. NRC and FEMA will institute procedures to enhance the review of objectives and scenarios for joint exercises. This review is to assure that both the onsite considerations of NRC and the offsite considerations of FEMA are adequately addressed and integrated in a manner that will provide for a technically sound exercise upon which an assessment of preparedness capabilities can be based. The NRC/FEMA procedures will provide for the availability of exercise objectives and scenarios sufficiently in advance of scheduled exercises to allow enough time for adequate review by NRC and FEMA and correction of any deficiencies by the licensee. The failure of a licensee to develop a scenario that adequately addresses both onsite and offsite considerations may result in NRC taking enforcement actions.

The FEMA reports will be a part of an interim finding on emergency preparedness; or will be the result of an exercise conducted pursuant to FEMA's review and approval procedures under 44 CFR part 350 and NRC's requirement under 10 CFR part 50, appendix E, Section IV.F. Exercise evaluations will identify one of the following conditions: (1) There is reasonable assurance that the plans are adequate and can be implemented as demonstrated in the exercise; (2) there are deficiencies that must be corrected; or (3) FEMA is undecided and will provide a schedule of actions leading to a decision. The schedule for issuance of the draft and final exercise reports will be as shown in FEMA-REP-14 (Radiological Emergency Preparedness Exercise Manual).

The deficiency referred to in (2) above is defined as an observed or identified inadequacy of organizational performance in an exercise that could cause a finding that offsite emergency preparedness is not adequate to provide reasonable assurance that appropriate protective measures can be taken in the event of a radiological emergency to protect the health and safety of the public living in the vicinity of a nuclear power plant. Because of the potential impact of deficiencies on emergency preparedness, they should be corrected within 120 days through appropriate remedial actions, including remedial exercises, drills, or other actions.

Where there are deficiencies of the types noted above, and when there is a potential for remedial actions, FEMA Headquarters will promptly (1-2 days) discuss these with NRC Headquarters. Within 10 days of the exercise, official notification of identified deficiencies will be made by FEMA to the State, NRC Headquarters, and the RAC with an information copy to the licensee. NRC will formally notify the licensee of the deficiencies and monitor the licensee's efforts to work with State and local authorities to correct the deficiencies. Approximately 60 days after official notification of the deficiency, the NRC, in consultation with FEMA, will assess the progress being made toward resolution of the deficiencies.

D. Withdrawal of Reasonable Assurance Finding

If FEMA determines under 44 CFR 350.13 of its regulations that offsite emergency plans or preparedness are not adequate to provide reasonable assurance that appropriate protective measures can be taken in the event of radiological emergency to protect the health and safety of the public, FEMA shall, as described in its rule, withdraw approval.

Upon receiving notification of such action from FEMA, the NRC will promptly review FEMA's findings and determinations and formally document the NRC's position. When, as described in 10 CFR 50.54(s)(2)(ii) and 50.54(s)(3) of its regulations, the NRC finds

the state of emergency preparedness does not provide reasonable assurance that adequate protective measures can and will be taken in the event of a radiological emergency, the NRC will notify the affected licensee accordingly and start the "120-day clock."²

E. Emergency Planning and Preparedness Guidance

NRC has lead responsibility for the development of emergency planning and preparedness guidance for licensees. FEMA has lead responsibility for the development of radiological emergency planning and preparedness guidance for State and local agencies. NRC and FEMA recognize the need for an integrated, coordinated approach to radiological emergency planning and preparedness by NRC licensees and State and local governments. NRC and FEMA will each, therefore, provide opportunity for the other agency to review and comment on such guidance (including interpretations of agreed joint guidance) prior to adoption as formal agency guidance.

F. Support for Document Management System

FEMA and NRC will each provide the other with continued access to those automatic data processing support systems which contain relevant emergency preparedness data.

G. Ongoing NRC Research and Development Programs

Ongoing NRC and FEMA research and development programs that are related to State and local radiological emergency planning and preparedness will be coordinated. NRC and FEMA will each provide opportunity for the other agency to review and comment on relevant research and development programs prior to implementing them.

H. Public Information and Education Programs

FEMA will take the lead in developing public information and educational programs. NRC will assist FEMA by reviewing for accuracy educational materials concerning radiation, and its hazards and information regarding appropriate actions to be

²Per 10 CFR 50.54(s)(2)(ii), the Commission will determine whether the reactor shall be shut down or other appropriate enforcement actions if such conditions are not corrected within four months. The NRC is not limited by this provision of the rule, for, as stated in 10 CFR 50.54(s)(3), "Nothing in this paragraph shall be construed as limiting the authority of the Commission to take action under any other regulation or authority of the Commission or at any time other than that specified in this paragraph" (emphasis added).

taken by the general public in the event of an accident involving radioactive materials.

I. Recovery from Disasters Affecting Offsite Emergency Preparedness

Disasters that destroy roads, buildings, communications, transportation resources or other offsite infrastructure in the vicinity of a nuclear power plant can degrade the capabilities of offsite response organizations in the 10-mile plume emergency planning zone. Examples of events that could cause such devastation are hurricanes, tornadoes, earthquakes, tsunamis, volcanic eruptions, major fires, large explosions, and riots.

If a disaster damages the area around a licensed operating nuclear power plant to an extent that FEMA seriously questions the continued adequacy of offsite emergency preparedness, FEMA will inform the NRC promptly. Likewise, the NRC will inform FEMA promptly of any information it receives from licensees, its inspectors, or others, that raises serious questions about the continued adequacy of offsite emergency preparedness. If FEMA concludes that a disaster-initiated review of offsite radiological emergency preparedness is necessary to determine if offsite emergency preparedness is still adequate, it will inform the NRC in writing, as soon as practicable, including a schedule for conduct of the review. FEMA will also give the NRC (1) interim written reports of its findings, as appropriate, and (2) a final written report on the results of its review.

The disaster-initiated review is performed to reaffirm the radiological emergency preparedness capabilities of affected offsite jurisdictions located in the 10-mile emergency planning zone and is not intended to be a comprehensive review of offsite plans and preparedness.

The NRC will consider information provided by FEMA Headquarters and pertinent findings from FEMA's disaster-initiated review in making decisions regarding the restart or continued operation of an affected operating nuclear power reactor. The NRC will notify FEMA Headquarters, in writing, of the schedule for restart of an affected reactor and keep FEMA Headquarters informed of changes in that schedule.

IV. NRC/FEMA Steering Committee

The NRC/FEMA Steering Committee on Emergency Preparedness will continue to be the focal point for coordination of emergency planning and preparedness. As discussed in Section I of this agreement, response activities between these two agencies are addressed in a separate MOU. The Steering Committee will consist of an equal number of members to represent each agency with one vote per agency. When the Steering Committee cannot agree on the resolution of

an issue, the issue will be referred to NRC and FEMA management. The NRC members will have lead responsibility for licensee planning and preparedness and the FEMA members will have lead responsibility for offsite planning and preparedness. The Steering Committee will assure coordination of plans and preparedness evaluation activities and revise, as necessary, acceptance criteria for licensee, State and local radiological emergency planning and preparedness. NRC and FEMA will then consider and adopt criteria, as appropriate, in their respective jurisdictions. (See Attachment I).

V. Working Arrangements

A. The normal point of contact for implementation of the points in this MOU will be the NRC/FEMA Steering Committee.

B. The Steering Committee will establish the day-to-day procedures for assuring that the arrangements of this MOU are carried out.

VI. Memorandum of Understanding

A. This MOU shall be effective as of date of signature and shall continue in effect unless terminated by either party upon 30 days notice in writing.

B. Amendments or modifications to this MOU may be made upon written agreement by both parties.

Approved for the U.S. Nuclear Regulatory Commission.

Dated: June 17, 1993.

James M. Taylor,

Executive Director for Operations.

Dated: June 17, 1993.

Approved for the Federal Emergency Management Agency.

Richard W. Krimm,

Acting Associate Director, State and Local Programs and Support.

ATTACHMENT 1—FEMA/NRC STEERING COMMITTEE

Purpose

Assure coordination of efforts to maintain and improve emergency planning and preparedness for nuclear power reactors as described in the NRC and FEMA rules and the NRC/FEMA MOU on Radiological Emergency Planning and Preparedness. Coordinate consistent criteria for licensee, State and local emergency plans and preparedness.

Membership

The NRC and FEMA consignees of this MOU will designate respective co-chairs for the Steering Committee. The designated co-chairs will, in turn, appoint their respective members to the Committee.

Federal Emergency Management Agency, DHS

§ 354.3

Membership Changes

Changes to the membership of the NRC/FEMA Steering Committee may be made by the co-chairs representing the agency whose member is being changed.

Operating Procedures

The Steering Committee will maintain a record of each meeting to include identification of issues discussed and conclusions reached. No meeting will be held without the attendance and participation of at least the co-chairs or two assigned members of each agency.

Coordination

When items involving responsibilities of other NRC or FEMA offices are discussed, the affected offices will be contacted as appropriate.

[58 FR 47997, Sept. 14, 1993]

PART 354—FEE FOR SERVICES TO SUPPORT FEMA'S OFFSITE RADIOLOGICAL EMERGENCY PREPAREDNESS PROGRAM

Sec.

354.1 Purpose.

354.2 Scope of this regulation.

354.3 Definitions.

354.4 Assessment of fees.

354.5 Description of site-specific, plume pathway EPZ biennial exercise-related component services and other services.

354.6 Billing and payment of fees.

354.7 Failure to pay.

AUTHORITY: Reorganization Plan No. 3 of 1978, 43 FR 41943, 3 CFR, 1978 Comp., p. 329; Sec. 109, Pub. L. 96-295, 94 Stat. 780; Sec. 2901, Pub. L. 98-369, 98 Stat. 494; Title III, Pub. L. 103-327, 108 Stat. 2323-2325; Pub. L. 105-276, 112 Stat. 2502; EO 12148, 44 FR 43239, 3 CFR, 1979 Comp., p. 412; EO 12657, 53 FR 47513, 3 CFR, 1988 Comp., p. 611.

SOURCE: 66 FR 32577, June 15, 2001, unless otherwise noted.

§ 354.1 Purpose.

This part establishes the methodology for FEMA to assess and collect user fees from Nuclear Regulatory Commission (NRC) licensees of commercial nuclear power plants to recover at least 100 percent of the amounts that we anticipate to obligate for our Radiological Emergency Preparedness (REP) Program as authorized under Title III, Public Law 105-276, 112 Stat. 2461, 2502. Public Law 105-276 established in the Treasury a Radio-

logical Emergency Preparedness Fund, to be available under the Atomic Energy Act of 1954, as amended (42 U.S.C. 2011 et. seq.), and under Executive Order 12657 (3 CFR, 1988 Comp., p. 611), for offsite radiological emergency planning, preparedness, and response. Beginning in fiscal year 1999 and thereafter, the Director of FEMA must publish fees to be assessed and collected, applicable to persons subject to FEMA's radiological emergency preparedness regulations. The methodology for assessment and collection of fees must be fair and equitable and must reflect the full amount of costs of providing radiological emergency planning, preparedness, response and associated services. Our assessment of fees include our costs for use of agency resources for classes of regulated persons and our administrative costs to collect the fees. Licensees deposit fees by electronic transfer into the Radiological Emergency Preparedness Fund in the U.S. Treasury as offsetting collections.

§ 354.2 Scope of this regulation.

The regulation in this part applies to all persons or licensees who have applied for or have received from the NRC:

(a) A license to construct or operate a commercial nuclear power plant;

(b) A possession-only license for a commercial nuclear power plant, with the exception of licensees that have received an NRC-approved exemption to 10 CFR 50.54(q) requirements;

(c) An early site permit for a commercial nuclear power plant;

(d) A combined construction permit and operating license for a commercial nuclear power plant; or

(e) Any other NRC licensee that is now or may become subject to requirements for offsite radiological emergency planning and preparedness.

§ 354.3 Definitions.

The following definitions of terms and concepts apply to this part:

Biennial exercise means the joint licensee/State and local government exercise, evaluated by FEMA, conducted around a commercial nuclear power plant site once every two years in conformance with 44 CFR part 350.

EPZ means emergency planning zone.

Hogan, Rosemary

From: Hogan, Rosemary
Sent: Wednesday, March 23, 2011 2:53 PM
To: Pires, Jose
Subject: FW: IMMEDIATE ACTION: OGC request for all Yucca Mt documents
Attachments: ML110740769.pdf; ACTION: G20110183 - Due Today
Importance: High

Please call

Thank you in advance for your cooperation in this matter. If you have any questions regarding which materials should be preserved or how they should be preserved, or suggestions, please do not hesitate to contact Patricia Hirsch, Assistant General Counsel for Legal Counsel, Legislation and Special Projects at 301-415-1607 or by e-mail.

From: Rivera-Lugo, Richard
Sent: Thursday, March 17, 2011 1:46 PM
To: RES_DE
Subject: IMMEDIATE ACTION: OGC request for all Yucca Mt documents
Importance: High

DE Staff,

If you have worked in any projects related to *Yucca Mountain High-Level Waste Repository*, please send me an e-mail ASAP TODAY with the following information:


- Job Code Number (JCN)
- Title of the project
- Technical area focus of the project (e.g. seismic, structural)
- Brief description (1 or 2 sentences)

This information needs to be provided **TODAY** to the House of Representatives Committee on Oversight and Government Reform. Staff who have been involved in Yucca Mountain-related work will be contacted later to gather more detailed information from each of the projects.

I apologize for the quick turnaround request.

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.

DM/14

From: Dion, Jeanne
Sent: Thursday, March 17, 2011 1:18 PM

To: Rivera-Lugo, Richard; Ibarra, Jose; Armstrong, Kenneth
Cc: Gibson, Kathy; Case, Michael; Coyne, Kevin; Rini, Brett; Sheron, Brian; Uhle, Jennifer; Dempsey, Heather
Subject: ACTION: OGC request for all Yucca Mt documents
Importance: High

Everyone,
I apologize for the quick turnaround for this. The House of Representatives Committee on Oversight and Government Reform has requested all records and information related to Yucca High-level waste repository. See the Attached announcement and ticket.

ACTION

Divisions: Respond to me ASAP **today 3/17** with the approximate number of projects that supported Yucca Mountain.

I don't need all the details yet- I do need to respond to OGC with an approximate date we can produce the documents.

Call me if you any questions

Thanks,

Jeanne Dion
Technical Assistant (Acting)
U.S. Nuclear Regulatory Commission
Office of Nuclear Regulatory Research
jeanne.dion@nrc.gov
301-251-7482



UNITED STATES NUCLEAR REGULATORY COMMISSION

Yellow Announcement: YA-11-0033

Date: March 15, 2011

TO: All NRC Employees

**SUBJECT: DOCUMENT HOLD INSTRUCTIONS RE: YUCCA HIGH LEVEL WASTE
REPOSITORY**

The House of Representatives Committee on Oversight and Government Reform has requested documents and information related to the Yucca High-Level Waste Repository matter. NRC employees are directed to maintain all pertinent documents falling within the scope of the request, which is described below. Requested records, documents, data, or information should not be destroyed, modified, removed, transferred or otherwise made inaccessible. The request includes documents or information in your possession or control or held by employees or agents acting on your behalf. The request includes electronically stored information (ESI) which is the preferred format, as well as hard copies of documents.

What You Need to Do

It is your responsibility to ensure that any potentially relevant information related to this matter/case that is within your possession, custody, or control, is preserved and not destroyed, even if the policy or practice of your office would normally dictate otherwise.

What Must Be Preserved

The information that must be preserved includes Electronically Stored Information ("ESI"), hard copies of documents, and tangible things. ESI includes, but is not limited to, computer files of any type (word processing documents, e-mail messages, spreadsheets, calendar entries, and flash memory media, including USB drives and memory cards). It includes not only information stored on NRC computers but can also include information stored on home computers, personal laptop computers, PDAs such as Palm Pilots and Blackberries, and mobile phones, if used for NRC work.

All information, including privileged information, must be preserved.

If you identify responsive documents, you will receive additional instructions for producing this information for provision to the Committee. In the meantime, please carefully review this e-mail and preserve all materials in accordance with these instructions.

Thank you in advance for your cooperation in this matter. If you have any questions regarding which materials should be preserved or how they should be preserved, or suggestions, please do not hesitate to contact Patricia Hirsch, Assistant General Counsel for Legal Counsel, Legislation and Special Projects at 301-415-1607 or by e-mail.

RECORDS and INFORMATION REQUESTED:

1. A timeline of significant events related to the Commission's review of the ASLB's decision on DOE's motion to withdraw the license application, including, but not limited to the following:
 - a) Filing of each Commissioner's vote
 - b) Withdrawal of any Commissioner's vote
 - c) Active deliberation or discussions between Commissioners or their staffs.
2. Documents and communications, including e-mails, relating to the Commission's review of the ASLB's decision on DOE's motion to withdraw the license application.
3. Documents and communications, including e-mails, relating to reasons for the delay between the filing of the final Commissioner's vote and the scheduling of the affirmation session.
4. A timeline of all significant events related to the "orderly closure" of the High-Level Waste Program and the use of Nuclear Waste Fund resources under the Continuing Resolution, including but not limited to the following:
 - a) Communication to or among the Commissioners or their respective staffs
 - b) Internal communication to NRC staff
5. Documents and communications, including e-mails, relating to all significant dates concerning the "orderly closure" of the High-Level Waste Program and the use of Nuclear Waste Fund resources under the Continuing Resolution.
6. Documents and communications, including e-mails, exchanged among or originated by the Commissioners, their respective staffs, and the Commission staff relating to the funding of the High-Level Waste Program in FY2011. This request includes any reviews or recommendations provided by the Office of the General Counsel.
7. Documents and communications including e-mails exchanged among or originated by the Commissioners, their respective staffs, and Commission staff relating to the release of Volume III of the SER.
8. A statement by each individual responsible for reviewing and signing Volume III of the SER specifying whether he/she received the document for final concurrence and whether and when he/she gave that concurrence.

9. Documents and communications, including e-mails, related to the decision to develop a report separate from the SER to document the NRC staff's technical review activities completed to date.
10. Volume III of the SER, in un-redacted form.

/RA/

Stephen G. Burns
General Counsel

DISTRIBUTION:

ADAMS ACCESSION NUMBER: ML110740769

Document Name: G:\GC\Burns\Yellow Announcements\2011-YA – HLW.doc

OFFICE	OGC	OGC	OGC		
NAME	P. Hirsch	T. Rothschild	S. Burns <i>/RA/</i>		
DATE	3/ /11	3/ /11	3/15/11		

OFFICIAL RECORD COPY

Hogan, Rosemary

From: Hogan, Rosemary
Sent: Thursday, March 24, 2011 9:27 AM
To: Csontos, Aladar
Subject: FW: Underground Piping and Tanks Integrity Initiative. 03/07/2011
Attachments: Distribution Sheet.doc; ADAMS Document.APK

You may have received this already.

From: Stuchell, Sheldon
Sent: Monday, March 14, 2011 9:25 AM
To: Lubinski, John; Thomas, Brian; Lupold, Timothy; Cusumano, Victor; Pelton, David; Auluck, Rajender; Hiser, Allen; Skeen, David; Khanna, Meena; Rodriguez, Veronica; Dennig, Robert; Scott, Michael; Titus, Brett; Chokshi, Niles; Lauron, Carolyn; Mrowca, Lynn; McGovern, Denise; Rivera-Varona, Aida; Gavrilas, Mirela; Koshy, Thomas; Hogan, Rosemary; Beasley, Benjamin; Kuritzky, Alan; Demoss, Gary
Cc: Jolicoeur, John
Subject: FW: Underground Piping and Tanks Integrity Initiative. 03/07/2011

All,

As the NRR POC for any NEI interactions, I received the attached report. Please refer to **ML110700120** for the complete package (3 documents, including the revised guidance document). I provide the attached for information and potential coordination within the NRC.

The cover letter provides the guidance document for NRC informational purposes, and does not request endorsement.

The document was sent to Eric Leeds, with copies going to Jack Grobe, Michele Evans, and Robert Hardies.

I do not intend to respond at this time. If others should be made aware of these documents, please pass along.

Sheldon

From: E-RIDS2 Resource
Sent: Friday, March 11, 2011 10:34 AM
To: RidsAcraAcnw_MailCTR Resource; RidsManager Resource; RidsNroDcipCaeb Resource; RidsNroDnrlNrga Resource; RidsNroDnrlNwe1 Resource; RidsNrrDe Resource; RidsNrrDirs Resource; RidsNrrDirsIolb Resource; RidsNrrDirsIts Resource; RidsNrrDlrRapb Resource; RidsNrrDlrRarb Resource; RidsNrrDpr Resource; RidsNrrDprPfpb Resource; RidsNrrDprPspb Resource; RidsNrrPmda Resource; RidsNrrPmdaPhcb Resource; RidsResDE Resource; Stuchell, Sheldon
Subject: Underground Piping and Tanks Integrity Initiative. 03/07/2011

ADAMS Distribution Notification
D046 - Project 689 - NRR/NRO Interactions with Nuclear Energy Institute (NEI)

DM/15

Title	Underground Piping and Tanks Integrity Initiative.
Docket Number	PROJ0689
Document Date	03/07/2011

Author Name	Marion A
Author Affiliation	Nuclear Energy Institute (NEI)
Addressee Name	Leeds E J
Addressee Affiliation	NRC/NRR
Document Type	Letter
Availability	Publicly Available
Date to be Released	03/21/2011
Document Sensitivity	Non-Sensitive
Comment	EIE Submittal
Date Added	03/11/2011

Electronic Recipients can RIGHT CLICK and OPEN the first Attachment to View the Document in ADAMS. The Document may also be viewed by searching for **Accession Number ML110700120**.



NUCLEAR ENERGY INSTITUTE

Alexander Marion
VICE PRESIDENT
NUCLEAR OPERATIONS
NUCLEAR GENERATION DIVISION

March 7, 2011

Mr. Eric J. Leeds
Director, Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

Subject: Underground Piping and Tanks Integrity Initiative

Project Number: 689

Dear Mr. Leeds:

The NEI Nuclear Strategic Issues Advisory Committee (NSIAC) approved the Underground Piping and Tanks Integrity Initiative in September, 2010. This Initiative expanded the scope of the Buried Piping Integrity Initiative which had been approved in November 2009. Please note that this Initiative results in an enhanced inspection program for these components. The document that guides the implementation of this program, NEI 09-14, *Guideline for the Management of Buried Piping Integrity*, was recently revised to reflect the new Initiative. A copy of Revision 1 of the document is attached for your information. Revision 1 includes the following changes:

- The text of the revised Initiative
- Clarification of the intent through "shall" statements
- Guidance on the program scope
- A section on definitions
- Enhancements to the process for justifying deviations
- Expectations for communication of operating experience and deviations

One of the requirements in NEI 09-14 is the preparation of semi-annual reports to NSIAC on implementation status, operating experience related to buried piping, and developments in NDE technology. The January 2011 report on these matters was presented to NSIAC during its meeting earlier this month. A copy of the NSIAC report is attached for your information. You will note that

Mr. Eric J. Leeds

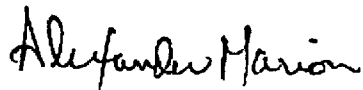
March 7, 2011

Page 2

as of the time we completed the implementation survey, all 104 plants were on schedule for implementation of the indentified program milestones.

We will continue to keep you and your staff informed of the status of industry activities associated with this important program. If you have any questions, please contact me at 202.739.8080; axm@nei.org or Jim Riley at 202.739.8137; jhr@nei.org.

Sincerely,

A handwritten signature in black ink that reads "Alexander Marion". The signature is written in a cursive, flowing style.

Alexander Marion

Attachments

c: Mr. Jack Grobe, NRR, NRC
Ms. Michele G. Evans, NRR/DCI, NRC
Mr. Robert O. Hardies, NRR/DCI, NRC

Report to NSIAC - Summary

Status of Implementation of Buried Piping Integrity Initiative Milestones

- Procedures and oversight by June 30, 2010
 - 104 plants complete
- Risk ranking by December 31, 2010
 - 47 plants complete
 - 57 plants on schedule
- Inspection plans by June 30, 2011
 - 1 plant complete
 - 103 plants on schedule
- Inspection start by June 30, 2012
 - 6 plants complete
 - 98 plants on schedule
- Complete condition assessment of piping containing radioactive material by June 30, 2013
 - 2 plants complete
 - 102 plants on schedule
- Complete asset management plan by December 31, 2013
 - 104 plants on schedule
- No plants have identified any deviations to the Buried Piping Integrity Initiative

Industry Buried Piping Leakage Trends (source INPO EPIX data base)

- Less than 10 leaks per year reported from 2000 to 2008
- 67 leaks reported in 2009
- 28 leaks reported in 2010 as of July
- The spike in reported leaks in 2009 and 2010 is a direct result of a request to the CNOs to report all leaks from buried piping beginning in 2009
- Of the 130 buried piping leaks reported from 2000 to the present:
 - 10% were in safety-related systems
 - 13% were in systems containing radioactive materials
 - 10% were in systems containing environmentally sensitive fluids
 - 57% were in low priority systems categorized as "run to failure" under the applicable program
 - 10% were in other systems

- The number of leaks in safety related systems and in piping containing radioactive materials in 2009 and 2010 was about 11%. This percentage is much lower than reported from 2000 to 2010. This difference may be due to the tendency to report only more important leaks prior to 2009.

NDE Technology Development

- Currently available technology
 - Direct excavation
 - Guided wave UT (screening only)
 - Internal "PIGs" and robotic vehicles if piping ID is accessible
- EPRI identifying and investigating other commercially available technologies

Overall Observations

- All plants have met the first Initiative milestone and there are no deviations to Initiative elements
 - Positive impact on program and processes is evident
 - OE and inspection results indicate that plants are implementing the Initiative expectations
- Too early to assess the impact of the Initiative on piping integrity
- Communication among ground water protection staff, NDE, and buried piping staff is important, expected, and improving
- Improvement is needed in the following areas:
 - New inspection technologies as alternatives to direct inspection by excavation
 - Better source identification of water samples with low tritium levels below reporting threshold
 - Improved operation and maintenance of installed cathodic protection systems

NEI 09-14 [Rev 1]

GUIDELINE FOR THE MANAGEMENT OF UNDERGROUND PIPING AND TANK INTEGRITY

December 2010

NEI 09-14 [Rev 1]

Nuclear Energy Institute

**Guideline for the
Management of
Underground Piping and
Tank Integrity**

December 2010

ACKNOWLEDGEMENTS

NEI appreciates the efforts of the members of the NEI Buried Piping Integrity Working Group and Task Force, EPRI's Equipment Reliability Action Plan Committee, and the EPRI Balance of Plant Corrosion Integration Committee for their support and direct participation in the development of this guideline.

REVISION SUMMARY

Revision	Description of Changes
0	Initial issue
1	<p>Extensive revision. Most significant changes:</p> <ul style="list-style-type: none">• Included text and intent of the Underground Piping and Tank Integrity Initiative• Included “shall” statements to designate expectations that must be met or deviations from them justified• Added “Definitions” (Section 4)• Added an expectation that significant inspection findings and new operating experience related to underground piping and tanks be communicated to NEI (Section 5.1)• Expanded the explanation of the intent of the Initiative and included clarifications of the Initiative scope (Section 6)• Expanded guidance for justifying deviations from the Initiative (Section 6.2.6)• Added Appendix B, a summary of the Initiative requirements in NEI 09-14

NOTICE

Neither NEI, nor any of its employees, members, supporting organizations, contractors, or consultants make any warranty, expressed or implied, or assume any legal responsibility for the accuracy or completeness of, or assume any liability for damages resulting from any use of, any information apparatus, methods, or process disclosed in this report or that such may not infringe privately owned rights.

TABLE OF CONTENTS

1	BACKGROUND	1
2	INTRODUCTION.....	3
3	INDUSTRY INITIATIVE ON UNDERGROUND PIPING AND TANK INTEGRITY	5
	3.1 SCOPE	5
	3.2 INITIATIVE GOAL	5
	3.3 INITIATIVE ACTIONS	6
	3.4 EXPECTATIONS	8
	3.5 REQUIREMENTS	9
4	DEFINITIONS.....	10
	4.1 ACCESSIBLE	10
	4.2 ADVERSE INSPECTION FINDINGS	10
	4.3 BELOW GRADE	10
	4.4 BURIED PIPING	10
	4.5 ENVIRONMENTALLY HAZARDOUS MATERIALS	10
	4.6 FAILURE.....	10
	4.7 FLUIDS	10
	4.8 LICENSED MATERIAL.....	10
	4.9 OUTSIDE OF A BUILDING	11
	4.10 PIPING SEGMENT	11
	4.11 PRIORITIZATION	11
	4.12 RUN TO FAILURE	11
	4.13 SAFETY RELATED	11
	4.14 SIGNIFICANT LEAKAGE	11
	4.15 TANK	12
	4.16 TUNNEL	12
	4.17 UNDERGROUND TANK	12
	4.18 UNDERGROUND PIPING	12
	4.19 VAULT	12
5	INDUSTRY ROLES AND RESPONSIBILITIES	13

5.1	UTILITIES	13
5.2	EPRI	14
5.3	INPO	14
5.4	ANI	14
5.5	NEI	15
6	INTENT OF THE UNDERGROUND PIPING AND TANKS INTEGRITY INITIATIVE	16
6.1	UNDERGROUND PIPING AND TANKS INTEGRITY INITIATIVE SCOPE.....	16
6.2	UNDERGROUND PIPING AND TANKS INTEGRITY INITIATIVE IMPLEMENTATION	17
6.2.1	Procedures and Oversight.....	18
6.2.2	Risk Ranking.....	18
6.2.3	Inspection Plan.....	19
6.2.4	Plan Implementation	20
6.2.5	Asset Management Plan	21
6.2.6	Procedure and oversight	23
6.2.7	Prioritization	24
6.2.8	Condition Assessment Plan.....	25
6.2.9	Plan Implementation	25
6.2.10	Asset Management Plan	26
7	REFERENCES.....	27
	APPENDIX A REPORT TO NSIAC.....	A-1
	APPENDIX B NEI 09-14 REQUIREMENTS	B-1

GUIDELINE FOR THE MANAGEMENT OF UNDERGROUND PIPING AND TANK INTEGRITY

1 BACKGROUND

This Guideline for the Management of Underground Piping and Tank Integrity describes the policy and practices that the industry commits to follow in managing underground piping and tanks. The Underground Piping and Tanks Integrity Initiative supersedes the Buried Piping Integrity Initiative; it incorporates all of its elements and adds additional scope and milestones.

The Buried Piping Integrity Initiative was approved by NSIAC (Nuclear Strategic Issues Advisory Committee) in November 2009. When the Buried Piping Integrity Initiative was approved, the scope was limited to piping that was in direct contact with the soil due to the inability to directly inspect this piping and due to the potential impact on the environment and public confidence if leakage occurred. However additional operating experience has shown that piping that is below grade and is not in direct contact with the soil and underground tanks can also degrade with potential adverse consequences. As a result, the Underground Piping and Tanks Integrity Initiative was developed to incorporate and expand upon the Buried Piping Integrity Initiative: its scope also includes selected underground piping that is not in direct contact with the soil and specified underground tanks. The key milestone implementation dates in the Underground Piping and Tanks Integrity Initiative were established to reflect the added initiative scope and its effect on the station resources that will be required to add these items into existing programs. The Underground Piping and Tanks Integrity Initiative was approved by NSIAC in September 2010.

Utility implementation of the Initiative will be verified as directed by the NSIAC.

This guideline contains the following information:

- The text and scope of the Underground Piping and Tanks Integrity Initiative (the "Initiative").
- The goals that drive the Initiative.
- Key definitions.
- Roles and responsibilities established to ensure implementation of the Initiative.
- Explanation of the intent of the Initiative.
- Insights for effective and consistent implementation within the industry.
- The content of the report to NSIAC on progress of implementing the Initiative.

The approach to addressing underground piping and tank issues embodied in this Initiative compliments the expectations in place under the Ground Water Protection Initiative, which was approved by NSIAC in 2006 and which remains in effect (guidance on implementation

of the Ground Water Protection Initiative is provided in NEI 07-07, *Industry Ground Water Protection Initiative, Final Guidance Document* (Reference 3). The Underground Piping and Tanks Integrity Initiative focus is on assessing in-scope components in order to provide reasonable assurance of their continued structural and leakage integrity with special emphasis on licensed materials. The focus of the Ground Water Protection Initiative (GPI) is on improving the management of situations involving inadvertent radiological releases that get into ground water and the communications with external stakeholders about those events. Integral to the Ground Water Protection Initiative is an evaluation of the potential for unintended leaks of licensed materials resulting from work activities and components that contain or could contain licensed material, including some components that are within the Underground Piping and Tanks Integrity Initiative scoping. In addition, under the GPI, early detection measures are established. If licensed material is detected by early detection measures, plant personnel are expected to appropriately investigate, remediate and communicate with external stakeholders. Utilities should establish governance to ensure that the activities under the two Initiatives are communicated and coordinated.

2 INTRODUCTION

Underground piping and tanks are used in several applications at plants with different governing requirements:

- safety related pipe and tanks
 - governed by plant Technical Specifications and ASME Code,
- non-safety related pipe and tanks containing licensed material in liquids or gases
 - governed by NRC regulations and within the scope of NEI's Ground Water Protection Initiative
- other pipes and tanks in non-safety related systems containing water, fuel oils, gases or other media
 - may be governed by local, State and EPA regulations.

The material condition of underground piping and tanks may not be fully characterized, and one of the means of protecting buried components, cathodic protection, may not have been properly maintained at some stations. In recent years, some self revealing leaks have occurred that could impact public confidence, regulatory margin, and, in some cases, plant operation. Additional impacts that could occur if performance is not improved could be:

- safety and operational challenges
- environmental impacts
- increased regulatory requirements for new and existing plants
- EPA violations with stakeholder or media interest
- license renewal delays
- heightened public opposition to new plant construction

As noted in the executive endorsement of this initiative, the leaders in the nuclear industry recognize that additional industry action directed at assessing the condition of underground piping and tanks within the nuclear fleet is warranted. Implementation of an assessment program for underground piping and tanks is designed to limit the potential for unintended leaks or integrity breaches. The industry's goal is to proactively address the integrity of underground piping and tanks and where possible, prevent leakage before it occurs using available technologies and other control and evaluative processes. To assure consistent and measured progress in this area an NSIAC Initiative addressing underground piping and tank integrity was approved to commit commercial nuclear power plants to specific program elements. The scope of the Underground Piping and Tanks Integrity Initiative includes selected piping and tanks on the site that are below grade and outside of buildings.

The EPRI Document “*Recommendations for an Effective Program to Control the Degradation of Buried Pipe*” (Reference 1) provides important additional considerations for successful implementation of the buried piping aspect of the Initiative.

NSIAC provides oversight of industry implementation of the Underground Piping and Tanks Integrity Initiative. Periodic reports will be prepared for NSIAC addressing:

- Progress on implementation of the elements of this initiative and any deviations.
- Industry experience and lessons learned.
- Progress of technology development.

Specific guidance on the periodic report is included in Appendix A.

3 INDUSTRY INITIATIVE ON UNDERGROUND PIPING AND TANK INTEGRITY

The Buried Piping Integrity Initiative was approved by NSIAC in November 2009. An extension of the Buried Piping Integrity Initiative that addresses selected underground piping and tanks was approved in September, 2010. The revised Initiative is known as the Underground Piping and Tanks Integrity Initiative.

The expected actions and milestone dates relevant to a given component depend upon whether the component was in the original scope of the Buried Piping Integrity Initiative or in the scope of the revised and renamed Underground Piping and Tanks Integrity Initiative.

3.1 SCOPE

The scope of the Underground Piping and Tanks Integrity Initiative includes the following.

A. Those within the scope of the original Buried Piping Integrity Initiative:

- All piping that is below grade and
 - Contains any fluid and
 - Is in direct contact with the soil

B. And the following additional components:

- Underground piping and tanks that are outside of a building and below grade (whether or not they are in direct contact with the soil) if they
 - Are safety related
 - Or -
 - Contain licensed material or are known to be contaminated with licensed material.

3.2 INITIATIVE GOAL

The goal of the Underground Piping and Tanks Integrity Initiative is to provide reasonable assurance of structural and leakage integrity of in-scope underground piping and tanks with special emphasis on piping and tanks that contain licensed materials.

The Underground Piping and Tanks Integrity Initiative will:

- Drive proactive assessment and management of the condition of piping and tanks that fall within the Initiative scope.
- Ensure sharing of industry experience.
- Drive technology development to improve available techniques for inspecting and analyzing underground piping and tanks.

- Improve regulatory and public confidence in the industry's management of the material condition of its underground tanks and piping systems.

3.3 INITIATIVE ACTIONS

In order to meet these goals, every utility shall implement measures or program(s) to satisfy the elements and associated key attributes in Sections 3.3.A and B. The language in Sections 3.3.A and B below documents the text of the Underground Piping and Tanks Initiative as approved by NSIAC.

A. Original Buried Piping Integrity Initiative Elements

The components governed by the original Buried Piping Integrity Initiative are described in Part A of Section 3.1 (Scope). The following elements, attributes, and milestones were established by the original Buried Piping Integrity Initiative when it was approved in November 2009. The EPRI document "*Recommendations for an Effective Program to Control the Degradation of Buried Pipe*" provides additional details on these elements and attributes.

Some changes are included in the Initiative description below (as compared to the version approved in November 2009) to clarify meaning, but their intent is unchanged and they remain in effect under the Underground Piping and Tanks Integrity Initiative.

1. Procedures and Oversight – By June, 30, 2010:

- Ensure clear roles and responsibilities including senior level accountability for the Buried Pipe Integrity Program.
- Develop a Buried Pipe Integrity Program document and implementing procedures.

2. Risk Ranking – Risk Rank buried piping segments by December 31, 2010. Risk Ranking shall incorporate the following attributes:

- Pipe function
- Pipe locations and layout
- Pipe materials and design
- Health of cathodic protection systems, if applicable
- Based on the above data and other information, determine:
 - The likelihood of failure of each piping segment
 - The consequences of failure of each piping segment
- A means to update the risk ranking as necessary
- A database to track key program data, inspection results, and trends

3. **Inspection Plan** – By June 30, 2011, develop an inspection plan to provide reasonable assurance of integrity of buried piping. This plan shall include the following key attributes:
 - Identification of piping segments to be inspected
 - Potential inspection techniques
 - Inspection schedule for buried piping segments based on risk ranking
 - Assessment of cathodic protection, if applicable
4. **Plan Implementation** – Implementation of the Inspection Plan shall start no later than June 30, 2012. The condition assessment of buried piping containing radioactive material shall be completed by June 30, 2013.
5. **Asset Management Plan** – Inspection results shall be used as input to the development of an asset management plan for buried piping. This plan shall receive a high level of review and approval and will be in place by December 31, 2013.

B. Underground Piping and Tanks Integrity Initiative Elements

The components falling within the scope of the Underground Piping and Tanks Integrity Initiative are described in Part B of Section 3.1 (Scope). The elements, attributes, and milestones described below are established for the additional scope of the Underground Piping and Tanks Integrity Initiative.

1. **Procedures and Oversight** – By December 31, 2011
 - Identify the plant programs or measures that manage the material condition of components within the scope of the Underground Piping and Tanks Integrity Initiative.
 - Establish the necessary controls and implementing process to coordinate the applicable programs and measures and ensure they meet the intent of the Initiative.
 - Establish clear roles and responsibilities including senior level accountability for implementation of the Underground Piping and Tanks Integrity Initiative.
2. **Prioritization** – Prioritize underground piping and tanks by June 30, 2012. Prioritization shall consider the following attributes:
 - Function
 - Locations and layout
 - Materials and design
 - Process fluid
 - Health of cathodic protection systems, if applicable

- Based on the above data and other information, determine:
 - The likelihood of failure of each component
 - The consequences of failure of each component
 - A means to update the prioritization scheme as necessary
 - Process(es) to allow retrieval of key program data
3. **Condition Assessment Plan(s)** – By December 31, 2012 develop or identify existing condition assessment plans that will provide reasonable assurance of integrity of components within the additional scope of the Underground Piping and Tanks Integrity Initiative. These plans shall include the following key attributes:
- Identification of underground piping and tanks to be assessed
 - Potential assessment techniques
 - Assessment schedules that take into account the relative priority of components. This schedule should be coordinated with the schedule developed for the original Buried Piping Integrity Initiative to ensure that the components with the highest overall priority are addressed first.
 - Assessment of cathodic protection, if applicable
4. **Plan Implementation** – Implementation of the Condition Assessment Plan for underground piping and tanks shall start no later than June 30, 2013. The condition assessment of underground piping and tanks containing radioactive material shall be completed by June 30, 2014.
5. **Asset Management Plan** – Inspection results shall be used as input to the development of asset management plans for components within the scope of the Underground Piping and Tanks Integrity Initiative. These plans shall receive a high level of review and approval and will be in place by December 31, 2014.

3.4 EXPECTATIONS

The expected outcome of the Underground Piping and Tanks Integrity Initiative is improved regulatory and public confidence in:

- The Industry's management of the material condition of its underground tanks and piping systems and
- The appropriateness of actions taken to establish reasonable assurance of their structural and leakage integrity.

Significant leaks from underground piping and tanks across the industry will be trended as a means of determining the Initiative's affect on the condition of these components.

In order to meet the goals of the Initiative, every utility should engage in industry activities (such as the Buried Piping Integrity Group) that support implementation of the Underground Piping and Tanks Integrity Initiative.

Industry organizations (EPRI, ANI, INPO, and NEI) cooperate in the manner described in this guideline and provide the information necessary to prepare periodic updates to NSIAC.

3.5 REQUIREMENTS

Every utility shall ensure that activities associated with the Underground Piping and Tanks Integrity Initiative and this document are implemented at its nuclear power plants in accordance with the intent of the Initiative and the implementation dates specified therein. Whenever the word “shall” is used in this document it indicates an action that is required under the Buried Piping and Tanks Integrity Initiative. If a plant cannot or will not implement any part of the Initiative (Sections 3.3.A and B) or a “shall” statement in this document, a justification for deviation from the Initiative shall be developed and processed in accordance with Sections 6.2.1 and 6.2.6.

Appendix B captures all the required elements of this document. Users should not rely on this appendix alone, but should read the document to ensure that the context of the requirements is fully understood.

4 DEFINITIONS

4.1 ACCESSIBLE

Piping and tanks that can be routinely observed without the required support of special tools or other assistance. Activities that would indicate inaccessibility include removal of security devices or manways, use of lifting rigs, and performance of excavation, or modification of building structures, armored embedments or encasements.

4.2 ADVERSE INSPECTION FINDINGS

Indications from inspections that require immediate repair or repair within one cycle.

4.3 BELOW GRADE

Locations below standard ground elevation as defined at the station.

4.4 BURIED PIPING

Piping that is below grade and in direct contact with the soil.

4.5 ENVIRONMENTALLY HAZARDOUS MATERIALS

Materials that are subject to EPA or EPA-authorized State regulations or that are specifically addressed in a plant's environmental program(s).

4.6 FAILURE

Unexpected system leakage or loss of structural integrity of piping or a tank.

4.7 FLUIDS

Fluids include both liquids and gases (including instrument air).

4.8 LICENSED MATERIAL

Licensed material (from 10 CFR 20.1003) (or licensed radioactive material as used in this document) means source material, special nuclear material, or byproduct material received, possessed, used, transferred or disposed of under a general or specific license issued by the Commission. Components containing licensed material covered under NEI 09-14 should be

consistent with those identified in NEI 07-07 (Reference 3) – see the discussion under scope for additional clarification.

4.9 OUTSIDE OF A BUILDING

A component is outside of a building if it is beyond the outside surface of all exterior walls and floors in the building.

4.10 PIPING SEGMENT

Portions of buried piping systems that are grouped together for risk ranking purposes based on similarities such as installation, manufacture, or environmental conditions. Some risk ranking methods may use other terms to refer to piping segments, such as zones.

4.11 PRIORITIZATION

The process of assigning relative importance of scoped components as determined by a set of parameters that reflect design and in situ conditions. The intent of the word “prioritization” as used in this document is to imply a process that is less formal than risk ranking.

4.12 RUN TO FAILURE

A strategy focused on repairing piping or tanks after leakage is discovered as opposed to assessing these items over time with the goal of preventing leakage.

4.13 SAFETY RELATED

Structures, systems, and components that are relied upon to remain functional during and following design basis events to ensure the integrity of the reactor coolant pressure boundary, the capability to shut down the reactor and maintain it in a safe shutdown condition, or the capability to prevent or mitigate the consequences of accidents that could result in potential offsite exposure comparable to the guidelines in 10CFR50 section 34(a)(1), 67(b)(2) or 10CFR100.11.

4.14 SIGNIFICANT LEAKAGE

Leaks which meet any of the following criteria

- Result in concentrations that could exceed the regulatory concentrations or limits established by the NRC or EPA, or
- Result in voluntary communication under the industry Ground Water Protection Initiative, or
- Result in the system or component being out of service

4.15 TANK

A fully enclosed stationary vessel used to hold or store fluids for distribution. Tanks are constructed primarily of non-earthen materials (e.g., wood, concrete, steel, or plastic) which provide structural support. Tanks do not include basins, ponds or reservoirs.

4.16 TUNNEL

A structure that is outside of a building, below grade, designed to accommodate personnel, and not routinely accessible.

4.17 UNDERGROUND TANK

All tanks that are outside of buildings and sufficiently below grade such that there is a reasonable possibility that leakage from inaccessible portions of the tank may not be detected. Detection can be accomplished by direct observation or by instrumentation that is capable of reliably detecting leakage before it becomes significant (see definition of Significant Leakage). The tanks may be in direct contact with concrete or located in trenches, underground vaults or tunnels. Within the context of this Initiative, underground tanks include abandoned tanks connected to active systems. *(Note that the word "underground" has a different meaning when used within the context of the Underground Piping and Tanks Integrity Initiative as compared to its meaning when used within the NRC's Generic Aging Lessons Learned report (GALL, NUREG 1801). Chapter IX of GALL defines underground as below grade and not in direct contact with the soil. NEI 09-14 defines underground as including both components that are buried (in direct contact with the soil) plus those that are not indirect contact with the soil.)*

4.18 UNDERGROUND PIPING

All piping that is below grade, not accessible, and outside of buildings. Buried piping (below grade and in direct contact with the soil) is considered to be a subset of underground piping. *(Note that the word "underground" has a different meaning when used within the context of the Underground Piping and Tanks Integrity Initiative as compared to its meaning when used within the NRC's Generic Aging Lessons Learned report (GALL, NUREG 1801). Chapter IX of GALL defines underground as below grade and not in direct contact with the soil.)*

4.19 VAULT

A structure that is outside of a building, below grade, not designed to accommodate personnel and not routinely accessible.

5 INDUSTRY ROLES AND RESPONSIBILITIES

This guideline will be implemented through the activities outlined below. These activities have the following intended purpose:

- Implementing the Underground Piping and Tanks Integrity Initiative
- Supporting the intent of the Initiative
- Verifying implementation of the Initiative through maintenance and monitoring of a set of metrics described in the report to NSIAC (Appendix A)
- Ensuring that operating experience related to underground piping and tank integrity is communicated
- Continuing research to identify and develop new techniques for inspection and maintenance/replacement of buried piping and tanks

5.1 UTILITIES

Utilities shall perform the following actions in support of the Initiative:

- Implement the actions required by the Initiative (Section 3.3 and all “shall” statements in this document).
- Process a justification for deviation (Section 6.2.6) whenever an action required by the Initiative or a “shall” statement in this document cannot be met.
- Report all results from inspections performed in accordance with the Initiative in the manner proscribed by the EPRI project manager responsible for the Buried Piping Integrity Group.
- Report to NEI the status of meeting the Initiative Implementation dates and any active deviations that do not meet the intent of the Initiative as required for the report to NSIAC (Appendix A)
- Report to INPO (EPIX) occurrences of leakage or adverse inspection findings in piping, and tanks within the scope of this Initiative as required for the report to NSIAC (Appendix A)

In order to meet the intent of the Initiative, utilities should:

- Participate in the industry programs that support the Initiative
- Contribute technical resources and executive leadership to industry efforts
- Communicate questions regarding the intent of the Initiative or the interpretation of this guideline to the Buried Piping Integrity Initiative Task Force. If a question relates to the text of the Initiative or a “shall” statement in this guideline, task force feedback on the questions would typically precede the development of a justification for deviation.

- Communicate instances of significant leakage or adverse inspection findings of piping and tanks within the scope of the Initiative to the NEI and the EPRI Buried Piping Integrity Group Project Managers in a timely manner for the purpose of rapid dissemination of preliminary operating experience and to request immediate assistance as needed.

5.2 EPRI

EPRI performs the following functions in support of the Initiative:

- Support the real time assessment of operating experience as reported by utilities.
- Collect underground piping and tank inspection data obtained from utilities and evaluate its implications annually.
- Manage the research necessary to improve inspection technology for underground piping and tanks
- Support repair/replacement technology as appropriate
- Provide a venue for identifying research and development needs, sharing operating experience, and other issues that have the potential for impact on the industry
- Compile and report to NEI the information necessary to make periodic reports to NSIAC (Appendix A) on progress in the development of inspection technology

5.3 INPO

INPO performs the following functions in support of the Initiative:

- Incorporate within their plant evaluations a review of buried/underground piping and tank programs as applicable. The review should include piping and tanks that may not be safety related but are important to safety or contain potentially radiologically contaminated fluids.
- Communicate operating experience relative to underground piping and tank integrity issues and other relevant information to the industry.
- Compile and report to NEI the operating experience information necessary to make periodic reports to NSIAC (Appendix A).

5.4 ANI

ANI performs the following function in support of the Initiative:

- Report significant recommendations from inspections related to underground piping and tank integrity and observations on Initiative implementation to NEI in support of the periodic report to NSIAC (Appendix A).

5.5 NEI

NEI performs the following functions in support of the Initiative:

- Manage the industry's regulatory interface on underground piping and tank issues of generic regulatory significance.
- Manage the operation of the Buried Piping Integrity Working Group and Task Force. Task Force responsibilities include:
 - Addressing questions regarding the interpretation of the Initiative
 - Judging whether deviations from Initiative requirements meet the intent of the Initiative
 - Evaluating important operating experience
 - Evaluating the overall status of Initiative implementation as part of the report to NSIAC
- Communicate information relative to the Underground Piping and Tanks Integrity Initiative to the industry.
- Compile the information necessary to make periodic reports to NSIAC (Appendix A) on implementation of the Initiative.
- Communicate the periodic report to NSIAC on implementation of the Underground Piping and Tanks Integrity Initiative, industry operating experience, and inspection technology developments (Appendix A).
- Coordinate activities with utilities, EPRI, ANI, and INPO.

6 INTENT OF THE UNDERGROUND PIPING AND TANKS INTEGRITY INITIATIVE

The following sections describe the activities and commitments that implement the Initiative actions presented in Section 3.3 of this document. Additional activities may also be necessary as industry experience and technology evolves.

Additional information on the intent of the Initiative is provided by EPRI document, "Recommendations for an Effective Program to Control the Degradation of Buried Pipe" (Reference 1). Although verbatim compliance with the EPRI guideline is not a commitment under the Initiative, the EPRI guidance forms the basis for the Initiative and provides additional details on the Initiative's attributes and elements. References to the applicable sections of the EPRI document, where applicable, are provided in the descriptions in Section 6.2.

6.1 UNDERGROUND PIPING AND TANKS INTEGRITY INITIATIVE SCOPE

The following are clarifications and explanations of the intent of the scope of the Initiative:

- In general, the piping and tanks that are subject to the Underground Piping and Tanks Integrity Initiative are determined by starting with the total population of utility owned piping and tanks within the site boundaries and adjusting this population using the scope statement in section 3.1 and the clarifications in this section. This will result in some low consequence components such as those associated with water and sewage treatment facilities and storm drains to be subject to the Initiative, but the components may not need to be inspected if categorized as "run to failure".
- Abandoned piping and tanks that are drained, not connected to an active system, and that are not known to be contaminated with licensed material are not within the scope of the Initiative.
- Piping and tanks that are below grade are excluded from the scope of the Initiative if they are accessible for direct inspection (see definition of Accessible).
- Portions of piping systems that are contained within building walls or basemats are not considered "underground" and are not within the scope of the Initiative.
- Underground piping includes buried piping, and piping in vaults, trenches, tunnels, beneath buildings, or encased in concrete.
- Piping owned by others that runs inside of the owner controlled area is not within the scope of the Initiative.
- If a vault is not accessible from inside a building, piping or tanks within the vault are considered outside of the building and within the scope of the Initiative even if the vault shares a wall with the building.

- Owner's piping located outside of the owner controlled area is not within the scope of the Initiative unless it is safety related or contains licensed material.

Licensed material (from 10 CFR 20.1003) means source material, special nuclear material, or byproduct material received, possessed, used, transferred or disposed of under a general or specific license issued by the Commission. 10 CFR 20.1003 . The term "licensed material" as used in this document is intended to be consistent with its meaning in the Ground Water Protection Initiative (NEI 07-07, Reference 3, Objective 2.2, Source Containing Licensed Material). Consistent with Regulatory Issue Summary RIS 2008-03 "Return/Re-use of Previously Discharged Licensed Material" "licensed material" as applied in the Underground Piping and Tank Integrity Initiative does not include the concentration(s) of radioactive material previously released as a controlled, planned airborne or liquid radioactive effluent when it is returned to the facility in concentrations below the exempt concentration limits in 10 CFR 30.

6.2 UNDERGROUND PIPING AND TANKS INTEGRITY INITIATIVE IMPLEMENTATION

The goal of the Underground Piping and Tanks Integrity Initiative is to provide reasonable assurance of structural and leakage integrity of in-scope underground piping and tanks with special emphasis on components that contain licensed materials. The concept of reasonable assurance within the context of the Initiative means establishing and maintaining confidence in underground piping and tank integrity based on engineering judgment supported by facts, actions, knowledge, experience, and/or observations. It defines a level of confidence which is deemed to be adequate to support a particular position.

The approach used to establish reasonable assurance should include leakage prevention by means of inspection as a key part of its process. It should be systematic and based on defined programs and processes that produce consistent results. The approach should be documented and supported by engineering evaluation, governing procedures, and risk ranking. It should be continuously validated by the results of examinations and fitness-for-service evaluations, and by the experience gained from required repairs and applied mitigation methods.

Although the Underground Piping and Tanks Integrity Initiative will provide a high level of confidence in the integrity of underground piping and tanks, it is not possible to guarantee that there will be no leakage or no structural degradation in these components. This initiative is intended to reduce the probability and consequences of underground piping and tank issues as low as reasonably achievable.

Some utilities include tanks in the same program as buried piping and some have separate programs for tanks. The objective of the Underground Piping and Tanks Integrity Initiative is not to dictate a specific approach; rather it is to ensure that by whatever means utilities manage these components, the applicable guidance in the programs meet the intent of the Initiative as explained in this document.

A. Activities within the Buried Piping Integrity Initiative Scope

6.2.1 Procedures and Oversight

The necessary governance and oversight responsibilities shall be in place by June 30, 2010. These include the procedures and oversight elements in section 3.3 and the following items.

- Clear lines of responsibility
The Buried Piping Integrity Program shall be established including the identification of a responsible executive who will carry out the senior level functions specified in the Initiative and this guideline.
- Process for justifying and approving exceptions to the Initiative
When a utility determines that a required element of the Initiative cannot be met, a technical justification for deviation shall be developed and retained with the utility's program documentation. The technical justification should provide the basis for determining that the proposed deviation meets the same objective, or level of conservatism exhibited by the original work product, and should clearly state how long the deviation will be in effect. Justifications for deviation shall be reviewed and approved in accordance with the applicable plant procedures with concurrence from the responsible utility executive.

Each utility shall report all approved justifications for deviation that are currently active at each of its plants to NEI semi-annually as part of the utility's input to the NSIAC report.

Note that the deviation process has been expanded in revision 1 of NEI 09-14. The entire process for justifying deviations is described in Section 6.2.6. The process in Section 6.2.6 will supersede the process in this section on December 31, 2011.

- Program Documents and Implementing Procedures
A Program Plan and associated procedures shall be developed to implement the Underground Piping and Tanks Integrity Initiative. The program documents and implementing procedures shall implement, as a minimum, the elements of the Underground Piping and Tanks Integrity Initiative (Section 3.3) and requirements in this document. Guidance for the specific content of the program document may be obtained from Sections 1.4.1 and 1.4.2 in the EPRI document on buried piping, "Recommendations for an Effective Program to Control the Degradation of Buried Pipe (Reference 1)."

6.2.2 Risk Ranking

A risk ranking process shall be used to understand site vulnerabilities and to help prioritize the selection of inspection locations. Risk ranking is performed by determining the likelihood of failure of each segment of applicable piping and combining that failure probability with the consequences of failure of that item. Components with high likelihood of failure and high

consequences of failure should receive more attention than low ranked components. A description of a risk ranking process for buried piping is provided in Reference 1.

Risk Ranking may be performed using software tools; several different software tools are available for this application. This guideline does not recommend or discourage any software system; but, regardless of the tool that is used, utilities should review the risk ranking results to ensure they reflect relative system priorities and are appropriate from an engineering judgment perspective.

The risk ranking process shall incorporate the attributes listed in Section 3.3.A.2 of this document as augmented by the “shall” statement below as a minimum.

- The risk ranking shall be periodically reviewed and updated as necessary to reflect inspection results, changes in operating conditions, and design modifications.

The initial risk ranking process shall be complete by December 31, 2010.

The risk ranking process shall determine the likelihood and consequence of failure for each piping segment in order to prioritize inspections or other actions and should also consider the following:

- Soil analysis data, when available to assess the likelihood of OD corrosion
- The potential for ID (fluid-side) corrosion and fouling
- The “health” of the cathodic protection system. “Health” should be interpreted in the context of whether the system is performing its function as designed.
- Over the line survey results. These results help assess the likelihood of OD corrosion.
- Whether piping and tanks contain fluids with licensed material. The risk ranking process should place sufficient priority on these components such that the intent of the Initiative is met.
- The results of the Ground Water Protection Initiative risk ranking process. The NEI Ground Water Protection Initiative also contains a risk ranking process for systems, structures, and components, including underground piping and tanks, containing radioactive materials. The results of the Ground Water Protection risk ranking process should also be used as an input in inspection plan development.

6.2.3 . Inspection Plan

The goal of the inspection plan is to support an assessment of the pipe’s structural and leakage integrity and provide reasonable assurance that a piping segment will maintain this integrity between successive inspections. The results of risk ranking along with plant and industry experience, plant licensing commitments, and trending of past inspection data should be considered to define inspection locations, inspection methods, and inspection schedules (see reference 1). Other considerations such as access may also be considered when the relative risk rankings are similar.

The inspection plan shall incorporate the attributes listed in Section 3.3.A.3 of this document as augmented by the “shall” statement below.

- Where buried pipes are protected by a cathodic protection (CP) system, the CP system shall be periodically inspected and tested to assess its continued adequacy.

The inspection plan shall be in place by June 30, 2011.

Development of an inspection plan should consider the following:

- The capabilities of the inspection techniques used
- Industry and internal operating experience
- Piping design characteristics
- The condition of the piping inspected (if inspected previously)
- The results of risk ranking performed for the Ground Water Protection Initiative
- Contingency plans that include
 - Methods and criteria to assess the significance of inspection results considering the damage mechanism and licensing commitments.
 - Repair and replacement options
- Input from a coating specialist
- Whether a CP system should be added to systems containing materials susceptible to degradation.

Sampling techniques and engineering evaluations based on known conditions of piping are an acceptable means of achieving reasonable assurance.

6.2.4 Plan Implementation

Plan implementation should consist of performing a condition assessment based on both inspection results and engineering evaluations. The inspections should be conducted at the most vulnerable locations determined using methods such as the risk ranking, results of cathodic protection and coating surveys, plant experience, etc. The combination of evaluations and inspections performed should provide reasonable assurance that the piping segment will maintain structural and leakage integrity until the next planned inspection. The inspection results should be documented and relevant photographs or video, when taken, should be filed to support inspection results. All inspection results (whether degradation exists or not) shall be reported to EPRI in the manner proscribed by the Buried Piping Integrity Group project manager.

Buried piping segments whose failures are inconsequential, and would cause no direct or collateral damage (such as potable water), may be considered “run to failure” and dispositioned accordingly. Safety related lines and those containing licensed materials should never be characterized as “run to failure”. Reference 1 provides more guidance on this categorization.

Consider benchmarking piping segments characterized as “run to failure” against programs at other utilities to check for consistent application. Note that segments categorized as “run to failure” are still considered within the scope of the Initiative and leaks and adverse inspection findings in these segments shall be reported in accordance with Appendix A.

Implementation of the inspection plan shall start no later than June 30, 2012 and the condition assessment of buried piping containing licensed materials shall be completed by June 30, 2013.

Inspections should consider the following:

- Inspecting the coating when a buried pipe is uncovered
- Performing a visual inspection of buried pipe when it is uncovered or entered for any reason in order to look for evidence of corrosion or damage.
- In situations where system operability or functionality is in question due to wall or weld degradation, examining the piping to determine remaining thickness.
- Estimating a projection of future damage based on current inspection results and the time to the next planned inspection or repair.
- Categorizing the inspection results in support of a remaining life calculation.
- Using the knowledge gained through the inspection and integrity assessment process to review and adjust as necessary the risk-informed ranking and the inspection plan.

The results of condition assessments should be an input to the Asset Management Plan.

6.2.5 Asset Management Plan

An asset management plan or plans addressing buried piping shall be developed and maintained. An asset management plan is a long range plan for managing the structural and leakage integrity of buried piping. Where the risk of failure is unacceptable, preventive and mitigative options should be implemented as part of the long range strategy.

The asset management plan for buried piping may be part of the overall site or fleet asset management plan.

The asset management plan should be a living document that is periodically reviewed and updated as more plant data becomes available through physical assessments and other means and as industry knowledge and technology evolve.

The asset management plan shall be reviewed and approved by an appropriate high level organization within the utility (such as the plant health committee).

The Asset Management Plan for buried piping shall be in place by December 31, 2013.

Key elements of an Assessment Management Plan should include:

- Inspection plans
- Planned maintenance activities
- Plans for repair
- Anticipated replacement

One method to develop an asset management plan would be to categorize each buried line based on its risk rank, contents (licensed material, diesel oil, raw or minimally treated water, hazardous chemicals, off gas, etc), importance to power generation, results of cathodic protection testing, and coating surveys, plant experience, etc. For example, each line would then be placed into categories such as:

- Components to be repaired or replaced with a planned schedule within an implementation plan.
- Components that need to be periodically inspected or monitored with a planned schedule.
- Components that are acceptable to run to leak and then repaired as needed (e.g., piping with low risk or low environmental impact. Plants should also consider public confidence concerns in applying this categorization.).

The plan should consider additional actions for a line such as:

- Inspect to determine the need to repair or replace.
- Add or enhance the cathodic protection.
- Add or enhance coating protection.
- Actions to minimize the degradation of the inner surface of the piping.
- Add protection against heavy surface loads.

B. Activities within the Underground Piping and Tanks Integrity Initiative Scope

The expectations described in Section 6.2.A above (regarding procedures and oversight, risk ranking, inspection plans, plan implementation, and asset management) are applicable to the components added by the Underground Piping and Tanks Integrity Initiative unless specifically stated otherwise below. The following sections (6.2.6 through 6.2.10) explain the intent of the Underground Piping and Tanks Initiative and provide additional guidance where appropriate. Note that the activities and milestones in sections 6.2.6 through 6.2.10 apply only to the additional components that were added by the Underground Piping and Tank Integrity Initiative when it extended the Buried Piping Integrity Initiative.

6.2.6 Procedure and oversight

Procedure and oversight responsibilities applicable to the Underground Piping and Tanks Integrity Initiative, including associated plant programs, shall be revised to include in-scope tanks and piping by December 31, 2011. The following steps are one method of approaching this process.

- Identify the piping and tanks that fall within the scope added by the Underground Piping and Tanks Integrity Initiative.
- Identify the programs or processes in place, or develop new ones if necessary, to manage the leakage and structural integrity of these components.
- Develop or amend existing overarching program or process documents to ensure that all the relevant programs are associated with the Underground Piping and Tanks Integrity Initiative and coordinated to control changes so that Initiative intent is managed and not inadvertently compromised.
- Identify roles and responsibilities for the new program/process
- Develop a process for justifying any deviations to the Initiative elements documented in this guideline. Ensure the process meets the intent of Section A.6.2.1 and this section.

Procedures and oversight shall incorporate the attributes listed in Section 3.3.B.1 plus the “shall” statements in the following paragraphs.

- Process for obtaining review of Initiative and NEI 09-14 interpretations
Questions regarding the intent of the Initiative or the guidance in this document should be communicated to NEI for review by the Buried Piping Integrity Task Force. The task force will reply to the questioner in a timely manner. The task force will also communicate interpretations of significant generic applicability to the industry as a means of facilitating consistent implementation of the Initiative.

If a utility proceeds with an activity that does not meet the language of the Initiative or a “shall” statement in this document, a justification for deviation shall be processed in accordance with the remainder of this section. Note that a deviation may still meet the intent of the Initiative (see below) even if it does not meet the exact language of the Initiative. For example, it may be possible to risk rank buried piping without addressing every parameter in Section 3.3.A.2.

- Process for justifying and approving exceptions to the Initiative
When a utility determines that a required element of the Initiative or a “shall” statement in this document will not or cannot be met, a justification for deviation shall be developed and retained with the utility’s corrective action program. If a utility finds itself outside of a required Initiative element and takes immediate action to meet the element, a deviation justification is not required, but the condition should be entered into the corrective action program and the Buried Piping Integrity Task Force should be notified. Required

elements of the Initiative include the entire text of the Initiative (Sections 3.3.A and 3.3.B) and all “shall” statements in this document (summarized in Appendix B).

The justification shall provide the basis for determining that the proposed deviation meets the same objective, or level of conservatism exhibited by the original requirement, and should clearly state how long the deviation will be in effect. Justifications for deviation shall be approved by the responsible utility executive.

To maintain the integrity of the deviation process and ensure a consistent approach to guideline implementation (or inability to implement), it is important for utilities to share deviations with the industry in an open and timely manner. Timely notification of deviations allows the industry to systematically review the issue for potential generic implications and take appropriate actions to facilitate consistent and appropriate implementation of guidance. The following guidance applies:

- Approved deviations shall be sent to NEI in a timely manner for review by the Buried Piping Integrity Task Force (BPITF).
 - The BPITF review is not an independent review or an approval. Their assessment is based on engineering judgment and experience.
- The BPITF will review the justification for deviation for the following items.
 - Effect on guidance.
 - Whether the deviation meets the intent of the Initiative.
 - Generic applicability.
- Generically applicable information relative to the justifications will be communicated to the industry.
- When the BPITF finds that the deviation does not meet the intent of the Initiative, the applicable utility and the Buried Piping Integrity Working Group will be informed. Semi-annually each utility shall report to NEI all active justifications for deviation at each of its plants that are judged to not meet the intent of the Initiative. This report is made as part of the utility’s input to the NSIAC report (Appendix A).
- If the BPITF finds that the deviation does meet the intent of the Initiative, the utility will be informed but the deviation will not be reported to NSIAC. The justification should be retained with utility program documentation.

All requirements described in Section A. 6.2.1 are relevant to this section of the Underground Piping and Tanks Integrity Initiative except for implementation schedules.

6.2.7 Prioritization

The risk ranking process for buried piping will have been established as part of the Buried Piping Integrity Initiative. This process may not be able to incorporate underground piping or tanks because of the different parameters of concern. The process of risk ranking is referred to as “prioritization” within the Underground Piping and Tanks Integrity Initiative in recognition of this situation and the possibility that a risk ranking tool may not be in place when utilities start

the process. Greater use of engineering judgment is expected in the development of prioritization results.

Prioritization shall incorporate the attributes listed in Section 3.3.B.2. Attributes that should also be considered when prioritizing components include:

- Age
- Relevant industry operating experience
- Piping flow rate
- Tank volume
- Contents
- Soil condition and chemistry
- Plant operating history
- Leakage history
- Internal corrosion consideration (such as flow accelerated corrosion for piping only, and microbiologically induced corrosion)
- Coating and lining
- Wet or alternately dry

Prioritization should be adjusted as appropriate to apply engineering judgment to the results.

All requirements described in Section A. 6.2.2 are relevant to the Underground Piping and Tanks Integrity Initiative, except for implementation schedules. Prioritization of components that fall within the scope of the Underground Piping and Tanks Integrity Initiative shall be complete by June 30, 2012.

6.2.8 Condition Assessment Plan

The results of prioritization along with plant and industry experience, plant licensing commitments, and trending of past inspection data should be used to define inspection locations, inspection methods, and inspection schedules. Condition assessment plans shall incorporate the attributes listed in Section 3.3.B.3. The Condition Assessment Plan shall be in place by December 31, 2012. All requirements described in Section A. 6.2.3 are relevant to the Underground Piping and Tanks Integrity Initiative, except for implementation schedules.

6.2.9 Plan Implementation

Implementation of the Condition Assessment plan for components included within the scope added by the Underground Piping and Tanks Integrity Initiative shall start no later than June 30, 2013. The condition assessment of underground piping and tanks containing licensed material shall be completed by June 30, 2014.

After prioritization is performed, the inspection process should address all piping and tanks within the scope of both the initial Buried Piping Integrity Initiative and the Underground Piping and Tanks Integrity Initiative in order to ensure the relative importance of the components are recognized and the more important components are inspected first when possible.

All requirements described in Section A. 6.2.4 are relevant to the Underground Piping and Tanks Integrity Initiative, except for implementation schedules.

6.2.10 Asset Management Plan

The Asset Management Plan for underground piping and tanks shall be in place by December 31, 2014. All requirements described in Section A. 6.2.5 are relevant to the Underground Piping and Tanks Integrity Initiative, except for implementation schedule.

7 REFERENCES

1. EPRI document, *Recommendations for an Effective Program to Control the Degradation of Buried Pipe*, December 2008
2. NACE (National Association of Corrosion Engineers) documents
 - a. SP0502-2008 (formerly RP0502), Pipeline External Corrosion Direct Assessment Methodology
 - b. SP0169-2007 (formerly RP0169), Control of External Corrosion on Underground or Submerged Metallic Piping Systems
 - c. RP0102-2002, In-Line Inspection of Pipelines
 - d. SP0207-2007, Performing Close-Interval Potential Surveys and DC Surface Potential Gradient Surveys on Buried or Submerged Metallic Pipelines
 - e. RP0288, "Standard Recommended Practice: Inspection of Linings on Steel and Concrete Tanks"
3. NEI 07-07, *Industry Ground Water Protection Initiative – Final Guidance Document*, August 2007
4. INPO 98-001, *Equipment Performance and Information Exchange System (EPIX) Reporting Requirements*
5. NUREG 1801, Volume 2 Section X1.M34, Generic Aging Lessons Learned (GALL) Report, Buried Piping and Tanks Inspection
6. ASTM G 158, "Standard Guide for Three Methods of Assessing Buried Steel Tanks"
7. ASTM E 1990, "Standard Guide for Performing Evaluations of Underground Storage Tank Systems for Operational Conformance with 40 CFR, Part 280 Regulations"
8. NLPA Standard 631, "Entry, Cleaning, Interior Inspection, Repair, and Lining of Underground Storage Tanks"

APPENDIX A

REPORT TO NSIAC

REPORT CONTENT

A report to NSIAC will be prepared semi-annually addressing the following four items:

1. Overview – developed by NEI semi-annually on the following topics as appropriate:
 - Notable information:
 - Incidents that attract media or industry stakeholder attention
 - INPO feedback from plant evaluations
 - Important ANI feedback from plant evaluations
 - Major piping or tank replacements and repairs as determined by NEI Buried Piping Integrity Task Force. Examples are major piping improvement projects where portions of service water systems were replaced with high density polyethylene piping or 6% molybdenum stainless steel)
 - Assessment of availability of technology to support inspections
 - Overall status of Initiative implementation, including the effect of active approved deviations to Initiative elements.
2. Progress on Initiative implementation and exceptions – utilities will report to NEI the status of implementation of each Initiative element at each of their plants using the approach described below. The report will be made semiannually (by January 31 and July 31) to NEI. NEI will collect and assemble the information.
 - Report implementation status for each Initiative element and for each plant. The elements and the expected implementation dates are repeated below:
 - Buried piping procedures and oversight in place by 6/30/10
 - Buried piping risk ranking complete by 12/31/10
 - Buried piping inspection plan in place by 6/30/11
 - Underground piping and tanks procedures and oversight in place by 12/31/11
 - Buried piping inspection start by 6/30/12
 - Underground piping and tanks prioritization complete by 6/30/12
 - Underground piping and tanks condition assessment plan in place by 12/31/12
 - Condition assessment of buried piping containing radioactive materials complete by 6/30/13
 - Underground piping and tanks inspection start by 6/30/13
 - Buried piping asset management plan in place by 12/31/13

- Condition assessment of underground piping and tanks containing radioactive materials complete by 6/30/14
 - Underground piping and tanks asset management plan in place by 12/31/14
 - Document the status for each implementation date as follows:
 - Will extend the implementation date or have extended
 - Implementation by the due date is at risk
 - On schedule to meet date
 - Complete
 - Describe each active deviation that does not meet the intent of the Underground Piping and Tanks Integrity Initiative . Note that the existence of an approved deviation to an implementation date does not change the fact that the date will not be met. If an implementation date is not going to be met, it shall be reported as such until the implementation is completed.
3. Industry experience and learning – Utilities will report the information below to INPO. INPO will collect the information and report the results to NEI.
- Utilities will enter operating experience related to the items below into the INPO EPIX database when instances occur. Entries should be made in a timeframe consistent with EPIX timing requirements (Reference 4).
 - Every leak from underground piping and tanks within the scope of this Initiative
 - Significant leaks from underground piping and tanks that are within the scope of this Initiative: Significant leaks are defined as those which meet either of the following criteria
 - Result in concentrations that could exceed the regulatory concentrations or limits established by the NRC or EPA., or
 - Result in voluntary communication under the industry Ground Water Protection Initiative, or
 - Result in the system or component being out of service
 - Adverse inspection findings: defined as indications from inspections that require immediate repair or repair within one cycle
 - Each instance will be categorized into one of the following five areas depending upon the piping segment or tank affected (where more than one area applies, use the one that appears highest in the list below).
 - Safety related
 - Contains licensed material
 - Contains environmentally hazardous fluids (e.g., oils, chemicals, non-radioactive fluids)
 - Components categorized as not “run to failure”
 - Components categorized as “run to failure”
4. Progress on inspection technology development – EPRI will assemble the information below and report the results to NEI.

- Identify each technology that is being researched for possible use in inspections
- Describe the development and implementation status of each identified inspection technology.

GENERAL

Information on leakage from applicable buried/underground piping and tanks using the above criteria will be collected beginning for events that occurred in 2009. Information on Initiative implementation and inspection technology will be collected beginning in 2010.

Information will be collected from utilities, INPO, ANI, and EPRI and sent to NEI semi-annually. NEI will assemble a report for Buried Piping Integrity Task Force review and assessment. The objective is to:

- Prepare an NSIAC presentation.
- Share implementation status and operating experience with the industry as appropriate.

APPENDIX B

NEI 09-14 REQUIREMENTS

Section	Requirement
3.3	<p>In order to meet these goals, every utility shall implement measures or program(s) to satisfy the elements and associated key attributes in Sections 3.3.A and B. The language in sections 3.3.A and B below documents the text of the Underground Piping and Tanks Initiative as approved by NSIAC...</p> <p><i><u>Note that the entire text of sections 3.3.A.1 thru 3.3.A.5 and 3.3.B.1 thru 3.3.B.10 is a requirement under the Underground Piping and Tanks Integrity Initiative since these sections constitute the text of the Initiative as approved by NSIAC. In the interest of brevity, the text from these sections is not captured in this table.</u></i></p>
3.5	Every utility shall ensure that activities associated with the Underground Piping and Tanks Integrity Initiative and this document are implemented at its nuclear power plants in accordance with the intent of the Initiative and the implementation dates specified therein.
3.5	If a plant cannot or will not implement any part of the Initiative (Sections 3.3.A and B) or a “shall” statement in this document, a justification for deviation from the Initiative shall be developed and processed in accordance with Section 6.1.
5.1	<p>Utilities shall perform the following actions in support of the Initiative:</p> <ul style="list-style-type: none"> • Implement the actions required by the Initiative (Section 3.3 and all “shall” statements in this document). • Process a justification for deviation (Section 6.1.1) whenever an action required by the Initiative or a “shall” statement in this document cannot be met. • Report all results from inspections performed in accordance with the Initiative in the manner proscribed by the EPRI project manager responsible for the Buried Piping Integrity Group. • Report to NEI the status of meeting the Initiative Implementation dates and any active deviations that do not meet the intent of the Initiative as required for the report to NSIAC (Appendix A) • Report to INPO (EPIX) occurrences of leakage or adverse inspection findings in piping, and tanks within the scope of this Initiative as required for the report to NSIAC (Appendix A)
6.2.1	The necessary governance and oversight responsibilities shall be in place by June 30, 2010.
6.2.1	The Buried Piping Integrity Program shall be established including the identification of a responsible executive who will carry out the senior level functions specified in the Initiative and this guideline.

Section	Requirement
6.2.1	When a utility determines that a required element of the Initiative cannot be met, a technical justification for deviation shall be developed and retained with the utility's program documentation.
6.2.1	Justifications for deviation shall be reviewed and approved in accordance with the applicable plant procedures with concurrence from the responsible utility executive.
6.2.1	Each utility shall report all approved justifications for deviation that are currently active at each of its plants to NEI semi-annually as part of the utility's input to the NSIAC report.
6.2.1	A Program Plan and associated procedures shall be developed to implement the Underground Piping and Tanks Integrity Initiative.
6.2.1	The program documents and implementing procedures shall implement, as a minimum, the elements of the Underground Piping and Tanks Integrity Initiative (Section 3.3) and requirements in this document.
6.2.2	A risk ranking process shall be used to understand site vulnerabilities and to help prioritize the selection of inspection locations.
6.2.2	<p>The risk ranking process shall incorporate the attributes listed in Section 3.3.A.2 of this document as augmented by the "shall" statement below as a minimum.</p> <ul style="list-style-type: none"> The risk ranking shall be periodically reviewed and updated as necessary to reflect inspection results, changes in operating conditions, and design modifications.
6.2.2	The initial risk ranking process shall be complete by December 31, 2010.
6.2.2	The risk ranking process shall determine the likelihood and consequence of failure for each piping segment in order to prioritize inspections or other actions
6.2.3	<p>The inspection plan shall incorporate the attributes listed in Section 3.3.A.3 of this document as augmented by the "shall" statement below.</p> <ul style="list-style-type: none"> Where buried pipes are protected by a cathodic protection (CP) system, the CP system shall be periodically inspected and tested to assess its continued adequacy.
6.2.3	The inspection plan shall be in place by June 30, 2011.
6.2.4	Note that segments categorized as "run to failure" are still considered within the scope of the Initiative and leaks and adverse inspection findings in these segments shall be reported in accordance with Appendix A.
6.2.4	All inspection results (whether degradation exists or not) shall be reported to EPRI in the manner proscribed by the Buried Piping Integrity Group project manager.
6.2.4	Implementation of the inspection plan shall start no later than June 30, 2012 and the condition assessment of buried piping containing licensed materials shall be completed by June 30, 2013.
6.2.5	An asset management plan or plans addressing buried piping shall be developed and maintained.
6.2.5	The asset management plan shall be reviewed and approved by an appropriate high level organization within the utility (such as the plant health committee).
6.2.5	The Asset Management Plan for buried piping shall be in place by December 31, 2013.
6.2.6	Procedure and oversight responsibilities applicable to the Underground Piping and Tanks Integrity Initiative, including associated plant programs, shall be revised to

Section	Requirement
	include in-scope tanks and piping by December 31, 2011.
6.2.6	Procedures and oversight shall incorporate the attributes listed in Section 3.3.B.1 plus the “shall” statements in the following paragraphs.
6.2.6	If a utility proceeds with an activity that does not meet the language of the Initiative or a “shall” statement in this document, a justification for deviation shall be processed in accordance with the remainder of this section.
6.2.6	When a utility determines that a required element of the Initiative will not or cannot be met, a justification for deviation shall be developed and retained with the utility’s corrective action program.
6.2.6	The justification shall provide the basis for determining that the proposed deviation meets the same objective, or level of conservatism exhibited by the original requirement, and should clearly state how long the deviation will be in effect.
6.2.6	Justifications for deviation shall be approved by the responsible utility executive.
6.2.6	Approved deviations shall be sent to NEI in a timely manner for review by the Buried Piping Integrity Task Force (BPITF).
6.2.6	Semi-annually each utility shall report to NEI all active justifications for deviation at each of its plants that are judged to not meet the intent of the Initiative.
6.2.7	Prioritization shall incorporate the attributes listed in Section 3.3.B.2.
6.2.7	Prioritization of components that fall within the scope of the Underground Piping and Tanks Integrity Initiative shall be complete by June 30, 2012.
6.2.8	Condition assessment plans shall incorporate the attributes listed in Section 3.3.B.3.
6.2.8	The Condition Assessment Plan shall be in place by December 31, 2012.
6.2.9	Implementation of the Condition Assessment plan for components included within the scope added by the Underground Piping and Tanks Integrity Initiative shall start no later than June 30, 2013.
6.2.9	The condition assessment of underground piping and tanks containing licensed material shall be completed by June 30, 2014.
6.2.10	The Asset Management Plan for underground piping and tanks shall be in place by December 31, 2014.
App A	If an implementation date is not going to be met, it shall be reported as such until the implementation is completed.

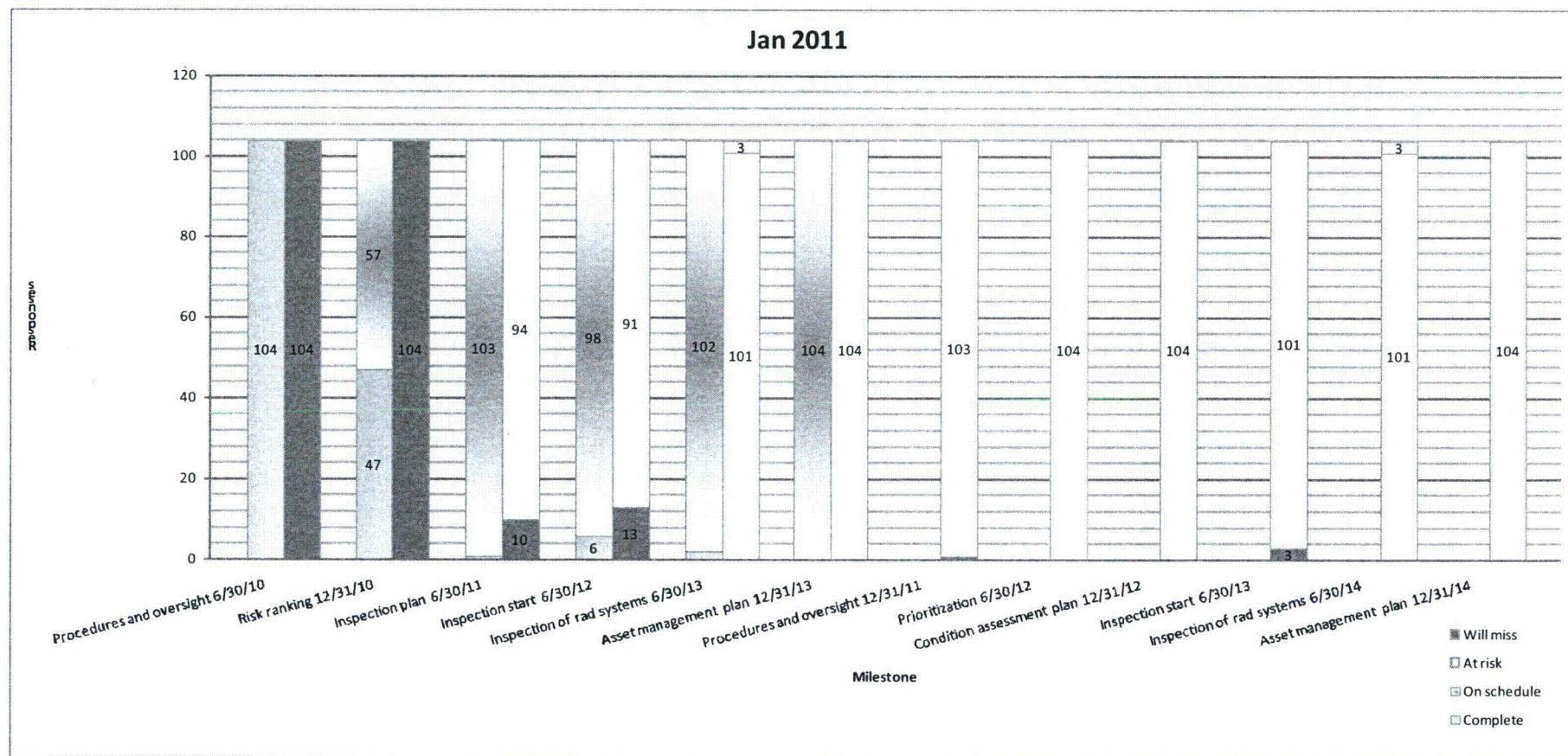
Underground Piping and Tanks Initiative Semi-Annual Report

Background

When NSIAC approved the Buried Piping Integrity Initiative in November 2009 and the Underground Piping and Tanks Integrity Initiative in September 2010, it asked for a semi-annual report on the status of related industry events and efforts. Four areas were to be covered: milestone status, leakage trends, NDE development, and overall assessment. The January 2011 report follows.

Milestone Implementation Status

The chart below captures the status of each of the milestones included in the Underground Piping and Tanks Integrity Initiative. The light green and gray bars indicate data from July 2010 (when only the Buried Piping Integrity Initiative was in place and only its 6 milestones were in effect). The dark green and white bars indicate data from January 2011.

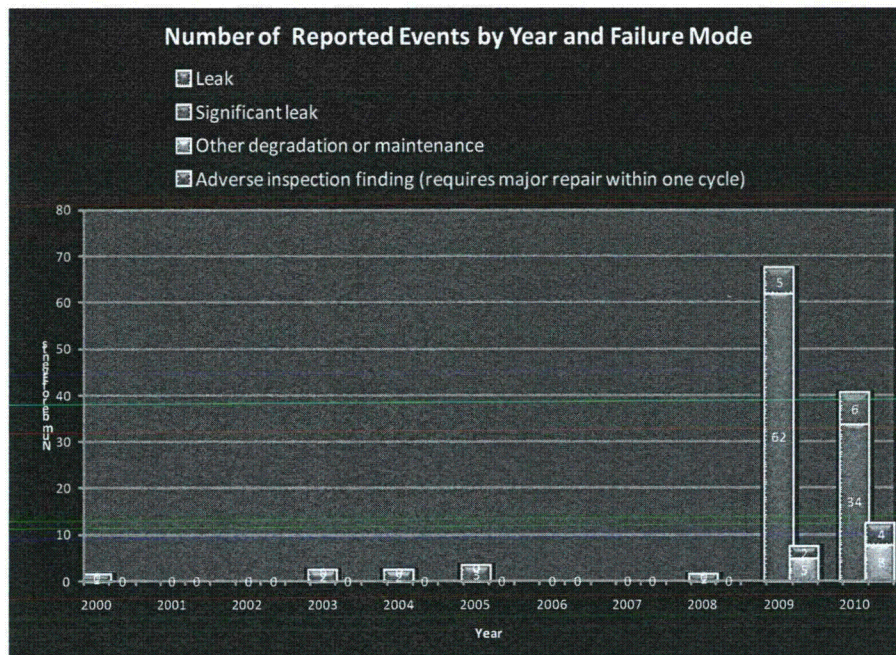


The following observations are offered on the above data:

- Chart colors: green=complete, white or gray=on schedule, yellow=at risk, and red=will not meet
- All plants have met the first and second milestones
- No deviations to the Initiative have been reported
- All plants report that they are on schedule for future milestones except one utility (3 plants) which reported that inspection start is at risk pending publication of a document that provides guidance on inspection planning. The Buried Piping Integrity Task force is working on this guidance and it should be completed before the middle of this year.
- One utility reported that inspections of all of its "rad systems" was complete in July, but not complete in January. That is because the utility discovered additional contaminated piping after the July 2010 report.

Trends: Leakage and Adverse Inspection Findings

The three charts below capture trends in leakage events and inspection findings.

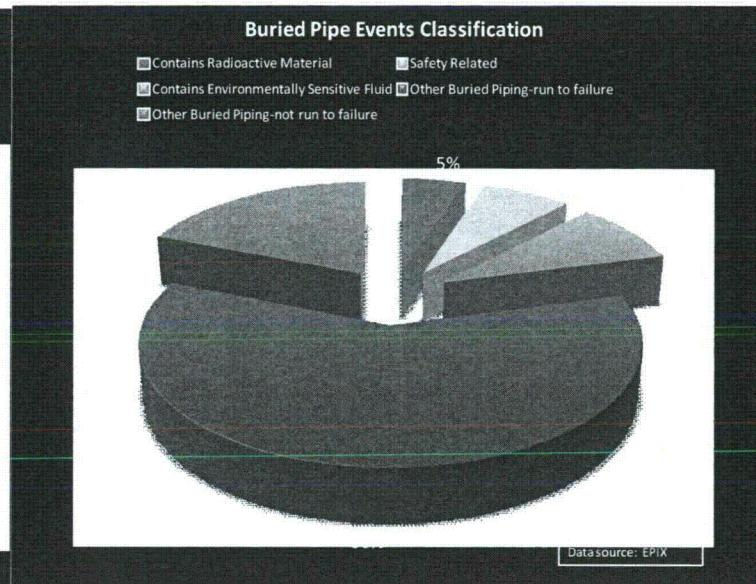
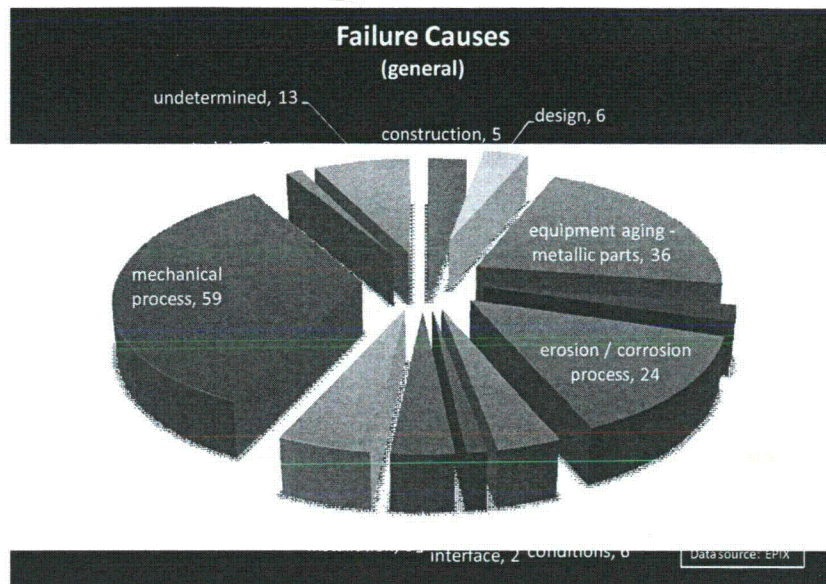


Notes to this chart:

The data was obtained from INPO's EPIX system in early January. All of the events in 2010 may not have been reported at that time.

Significant leaks are those that Exceed NRC or EPA limits, or are reportable under the Ground water Protection Initiative, or result in a system or component being out of service.

Adverse inspection findings are those that require repairs within one cycle.



The following observations are offered on the data in the above three charts:

- It is not possible to conclude that any leakage trends have been established under the industry's "Enhanced Inspection and Environmental Monitoring Initiatives". The trend has not been monitored for sufficient time and leakage events from 2010 may not have been reported at the time the above data was collected.
- The majority of leaks are inconsequential (coming from "run to failure" or other buried piping).
- Significant leaks amount to about 7 to 15% of total and the number of these leaks was approximately the same in 2009 and 2010.
- Historically, approximately 12% of leaks occur in systems that are safety related or contain licensed material. However this observation may be biased by data prior to 2009 when the leaks that were most likely to be reported were significant ones.
- The three major reported failure causes were mechanical processes, equipment aging, and erosion/corrosion. It is difficult to relate these general EPIX cause codes to buried piping events. Failure causes will be aligned to specific piping issues in data reported beginning in 2011.

NDE Technology Update

- EPRI issued a buried pipe NDE reference guide last August (Report 1021626). This guide describes various in-line and outside pipe non destructive examination technologies.
- Inspection methods and delivery tools are available; however vendors have limited resources, are in demand at other industries, and have limited experience in the nuclear industry.
- Challenges:
 - Appropriate implementation methods for the inspection technologies must be developed.
 - Technological capabilities and processes are not well documented for nuclear application
 - Industry's inspection schedules will be aggressive
 - Technologies must be demonstrated in the field
- Industry is working on these challenges through the EPRI Buried Piping Industry Group (BPIG). One important part of their effort is to communicate industry needs and expectations to vendors. Semi-annual BPIG meetings include vendors and vendor demonstrations.

Buried Piping Integrity Task Force Observations

- Utilities are implementing the Underground Piping and Tanks Initiative milestones as scheduled.
- It is important to keep the focus and necessary funding applied to inspection tool development.
- The industry's inspection guidance document, referred to as the "reasonable assurance document", is important. It will provide an acceptable approach to planning inspections such that the Initiative's goal of reasonable assurance of the structural and leakage integrity of buried piping is achieved. The Buried Piping Integrity Task Force should complete an initial version of this document by the middle of this year.
- Utilities need to start communicating their schedules for inspection resource needs so that the necessary planning can occur to avoid shortages. This communication should occur through the EPRI BPIG.
- A workshop to address coordination between the Underground Piping and Tanks Integrity and Ground Water Protection Initiative (collectively referred to as the Enhanced Inspection and Ground Water Monitoring Initiatives) will be held this summer. A document that will provide guidance on this coordination is already being developed and should be available by the middle of this year.

Hogan, Rosemary

From: The Government Affairs Institute at Georgetown University [gai@georgetown.edu]
Sent: Thursday, March 24, 2011 10:44 AM
To: Hogan, Rosemary
Subject: GAI ON THE HILL Newsletter

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THURSDAY, MARCH 24, 2011

VOLUME 2 | ISSUE 16

The Budget Saga Continues

By Ken Gold, Director

With the deadline on the previous continuing resolution (CR) looming, President Obama signed yet another stopgap budget bill late last week in order to avert a government shutdown. The sixth FY 11 continuing resolution cut an additional \$6 billion in federal spending, keeping the government running through April. That's the good news.

[\[More\]](#)

Upcoming GAI Course(s):

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Director's Desk

On March 18 President Obama signed the 6th continuing resolution for FY 11. Think that's a lot of CRs? In FY 2001, Congress enacted 21 of them. CRs go back to at least the 1870s, and every year since 1955 Congress has enacted at least one CR with the exception of three years (FY 89, FY 95, and FY 97.) But somehow knowing that they're a regular part of the process seems to make things worse. With Congress being unable to resolve FY 11 spending, and the national debt fast approaching the current ceiling, they've yet to turn their attention to the FY 12 appropriations bills.

DM/16

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Issue 11 | November 1, 2010

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Hogan, Rosemary

From: Rivera-Lugo, Richard
Sent: Thursday, March 24, 2011 4:55 PM
To: Csontos, Aladar; Gavrilas, Mirela; Boyce, Tom (RES); Sydnor, Russell; Koshy, Thomas; Hogan, Rosemary
Cc: Case, Michael; Richards, Stuart; Norris, Wallace; West, Stephanie
Subject: ACTION: 2nd Quarter Op Plan Update - Due 3/30

Importance: High

BCs,


Please update your **E** and **O** level milestones on the RES User Need and Operating Plan SharePoint Site for the 2nd and 3rd Quarter (January 1st – June 30th, 2011) FY2011, and provide the following input for the 2nd Quarter Performance Report by COB on Wednesday, March 30th:

- (1) NUREGs published
- (2) Significant meetings/seminars/conferences/published papers
- (3) Any challenges affecting technical work per branch (if applicable)

Should you have any questions please contact me at your earliest convenience.

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.

DM/17

From: Virgilio, Martin
To: Wiggins, Jim; Johnson, Michael; Leeds, Eric
Subject: Tasking Memo Under Development
Date: Monday, March 21, 2011 3:14:01 AM

FYI

From: Borchardt, Bill
Sent: Sunday, March 20, 2011 11:49 AM
To: Jaczko, Gregory
Cc: Weber, Michael; Virgilio, Martin; Muessle, Mary; Andersen, James
Subject: RE: Japan Follow-up

Chairman: will do

Mary: please have Jim and staff start on this.

From: Jaczko, Gregory
Sent: Sunday, March 20, 2011 11:37 AM
To: Borchardt, Bill
Subject: Fw: Japan Follow-up

Fyi. And can you draft up a tasking memo and a com that would accomplish each of these

From: Batkin, Joshua
To: Jaczko, Gregory
Sent: Sat Mar 19 18:50:50 2011
Subject: RE: Japan Follow-up

(b)(5)

DM/18

From: Weber, Michael
To: Sheron, Brian
Cc: Borchardt, Bill; Virgilio, Martin; Leeds, Eric; Johnson, Michael; Haney, Catherine; Evans, Michele; Wiggins, Jim; Miller, Charles; Sanfilippo, Nathan
Subject: Response - Tasking Memo
Date: Tuesday, March 22, 2011 10:16:51 PM

All valid topics, Brian. Planning for the near-term and longer-term task forces remains somewhat fluid and adjustable to meet Commission expectations. For now, the near-term Task Force will consist of 3 senior execs from NRC, 1 rehired annuitant, 1 ETA from OEDO, and 1 administrative assistant. No impacts on RES.

(b)(5)

Keep those ideas coming. These will be helpful to the task force and the steering committee.

Thanks

From: Sheron, Brian
To: Weber, Michael
Sent: Tue Mar 22 18:12:21 2011
Subject: Tasking Memo

Mike, I understand that there is an intention of using rehired annuitants to staff the task force looking at short and longer term evaluation of our regulations in light of the Fukushima event.

For the longer-term effort, I envisioned that RES would have a role to play in the task force. There are a number of issues I think need to be evaluated. For example,

(b)(5)

I envision these as longer-term studies that need to be done, and assume RES would

DM/19

have the lead for them. Thus, I would assume we would somehow be represented on these task forces.

From: Lauren, Carolyn
To: NRO DSER Branch Chiefs
Cc: Quinn, Laura; Muir, Jessie; Olson, Bruce; Jones, Henry; Willingham, Michael; Yokun, Patricia; Sutton, Mallecia; Tiruneh, Nebiyu; Lopas, Sarah; Bruner, Douglas; Dozier, Tamsen; Ahn, Hosung; Flanders, Scott; Chokshi, Nilesh
Subject: *Pending* Action / Preparation Requested: CR Allocation for Contractor Support - Next 6 weeks
Date: Wednesday, March 23, 2011 8:26:14 AM
Attachments: NCPM Processed 6 Week Allocation for DSER 03162011.pdf
Draft DSER Estimated 6 Week Needs 03232011.pdf

Hi -

Background

(b)(5)

Request

(b)(5)

Thanks,
Carolyn
2736

DM/20

(b)(5)

(b)(5)

(b)(5)

(b)(5)

(b)(5)

(b)(5)

From: Murphy, Jerome
To: NRO Division Directors; NRO Deputy Division Directors; NRO LA
Cc: Flanders, Rhea
Subject: FY 2013 New Reactors Business Line Base budget and Scenario A and B
Date: Wednesday, March 23, 2011 9:38:07 PM
Attachments: New Reactors BL (Budget Details) - Scenario Requirements 3-23-11.xlsx
Scenario A and B NRO Office Director briefing (3-23-11).xlsx

(b)(5)

Thanks,
Jerome Murphy
FPMB Branch Chief
NRO/PMDA
Jerome.Murphy@nrc.gov
(301) 415-2288

DM/21

FY 2013 Budget Formulation

(b)(5)

FY 2013 Budget Formulation

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FY 2013 Budget Formulation

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FY 2013 Budget Formulation

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FY 2013 Budget Formulation

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(b)(5)

From: Snyder, Amy
To: Hall, Victor
Cc: Akstulewicz, Frank; Flanders, Scott; Lauron, Carolyn; Madden, Patrick; Matthews, David; davidmatthews11@verizon.net; Dent, Kimberly; Erwin, Kenneth
Subject: New Reactor Licensing Subprogram input for Semiannual Report to Congress
Date: Thursday, March 24, 2011 11:36:18 AM
Attachments: Semiannual Report FY2011 3-24-11b.docx
Importance: High

Hi Vic,

Attached is the input for the New Reactor Licensing Subprogram for the Semiannual Report to Congress. It will need to be reviewed by OGC. Suggest you provide it to them as soon as you can. The file attached shows redline changes from the last report. You may accept all changes before you incorporate it in the entire NRO Semiannual Report for Congress document that is due to EDO by April 6.

If you have any questions, please contact me.

We have coordinated with DSER on the input for licensing. I think I resolved all their concerns. If DSER has any additional comments they will send them directly to you and copy me and Frank.

Thank you.

Amy

Amy M. Snyder
Technical Assistant for Licensing Operations
Office of New Reactors
Division of New Reactor Licensing
T6F24
M.S. T6C20M



(301) 415-6822 FAX: 301 415-6640
amy.snyder@nrc.gov

From: Hall, Victor
Sent: Thursday, March 24, 2011 9:59 AM
To: Snyder, Amy
Subject: Update on reports

Good morning Amy,
Any updates?
Thanks,
-Vic

DM/22

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From: Hall, Victor
To: Ader, Charles; Bergman, Thomas; Dudes, Laura; Flanders, Scott; Matthews, David; Mayfield, Michael; Schum, Constance; Akstulewicz, Frank; Chokshi, Niles; Coffin, Stephanie; Dixon-Herrity, Jennifer; Dudes, Laura; Lombard, Mark; Madden, Patrick; Segala, John; Shuaibi, Mohammed; Tappert, John; Araguas, Christian; Clark, Theresa; Erwin, Kenneth; Holmes, Beverly; Lauron, Carolyn; McGovern, Denise; Rivera-Varona, Aida; Rosales-Cooper, Cindy; Shams, Mohamed; Snyder, Amy; Williams, Donna
Cc: Green, Thomas
Subject: FYI - Semiannual Report Input
Date: Thursday, March 24, 2011 5:11:11 PM
Attachments: Semiannual Report FY2011 2ndQ - 5.docx

Thank you all for your help in gathering your sections for NRO's input to the Semiannual report to Congress!

DCIP will be putting the attached together for concurrence first thing tomorrow. I am sending this advance notice since we will be asking for a quick turnaround. We are shooting for concurrence by **March 29 (Tuesday)** - before the upcoming retreat. This should ensure that we have it to the front office, with all comments resolved, by April 1st.

The Quarterly report will follow shortly, but has to head to Tech Editing first. We will get it out to make its rounds as soon as possible. Thanks again for everyone's support!

If you have any comments or questions, please don't hesitate to e-mail, call, or stop by.
-Vic

Victor Hall, Operations Engineer
Quality and Vendor Inspection Branch 2
Office of New Reactors
U.S. Nuclear Regulatory Commission
Ph: (301)415-2915 Fax: (301)415-3325

DM/23

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ODriscoll, James

From: John M Fusco (b)(6)
Sent: Friday, March 11, 2011 4:34 PM
To: ODriscoll, James
Subject: @BreakingNews, 3/11/11 16:45



Breaking News (@BreakingNews)

3/11/11 16:45

Japan says radiation levels surges outside nuclearplant, expands area subject to evacuation - AP

"I wish to have no connection with any ship that does not sail fast, for I intend to go in harm's way."
CAPT John Paul Jones, USN
16 Nov 1778

DM / 24

ODriscoll, James

From: John M Fusco (b)(6)
Sent: Friday, March 11, 2011 3:50 PM
To: ODriscoll, James
Subject: Re: Whirlpool video off Japan

Pretty funny.

"I wish to have no connection with any ship that does not sail fast, for I intend to go in harm's way."
CAPT John Paul Jones, USN
16 Nov 1778

On Mar 11, 2011, at 15:46, "ODriscoll, James" <James.ODriscoll@nrc.gov> wrote:

1. US delivers coolant to Japan nuclear plant -Clinton

51 posts - 34 authors - Last post: 4 hours ago

"Some *really important coolant*..." Hilary exudes her brilliance once again ... She's sent this "*really important coolant*" to Japan under the ...

www.freerepublic.com/focus/f-news/2687232/posts- Block all freerepublic.com results

From: John M Fusco [mailto:(b)(6)]
Sent: Friday, March 11, 2011 3:29 PM
Subject: Whirlpool video off Japan



Wired (@wired)

3/11/11 15:21

Stunning video of whirlpool off the Japan coast: wrd.tw/hxO9Lg

DM/25

ODriscoll, James

From: John M Fusco (b)(6)
Sent: Friday, March 11, 2011 3:25 PM
To: ODriscoll, James
Subject: Re: New helmet armor

Ridiculous! We are returning to suits of armor. What's next? Joust training?

"I wish to have no connection with any ship that does not sail fast, for I intend to go in harm's way."
CAPT John Paul Jones, USN
16 Nov 1778

On Mar 11, 2011, at 15:23, "ODriscoll, James" <James.ODriscoll@nrc.gov> wrote:

Looks like something out of world war I

From: John M Fusco (b)(6)
Sent: Friday, March 11, 2011 3:20 PM
Subject: New helmet armor

Take a look at this! Paint it white and they will be like stormtroopers. How crazy, who will be able to hear you when you talk?

GUARD YOUR GRILL – MAXILLOFACIAL SHIELD

BY *MARINES* MAGAZINE STAFF | FRIDAY, MARCH 11 2011 8 06

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T

he Ballistic Protective Maxillofacial Shield, made by Gentex Corporation, is a piece of personal protective equipment made to shield a Marine's face from shrapnel and other ballistic threats faced on today's battlefield.

DM/26

<image002.jpg>

The shield comes in two models, the MFS 800 and MFS 1800 models. The 800 model offers protection comparable to ballistic protective eyewear. The 1800 offers protection up to the National Institute of Justice's level IIIA rating, which is no penetration with a 124-grain full metal jacket 9 mm projectile traveling at 1,350 to 1,450 feet per second.

The system is light, with the both models weighing under one and 1.9 pounds respectively. The system can be retrofitted to existing helmets, attaching to holes already in the helmet.

"The MFS is easy to install and use," said Richard Long, product manager, U.S. and international sales with Gentex Corp. "You just attach the brackets to your helmet and in a few minutes you'll have it snapped in and ready. You can remove it in seconds and work the shield up or down with one hand. It takes away another vulnerable spot. Instead of aiming for the head, enemies are aiming toward the face because it's unprotected. The MFS fixes that."

"I wish to have no connection with any ship that does not sail fast, for I intend to go in harm's way."

CAPT John Paul Jones, USN

16 Nov 1778

ODriscoll, James

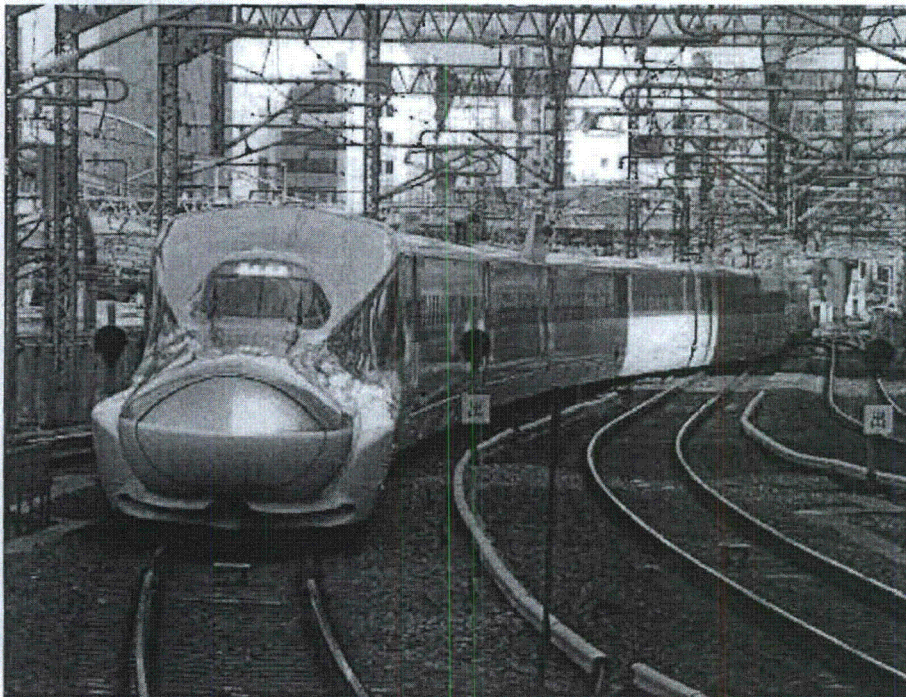
From: John M Fusco (b)(6)
Sent: Friday, March 11, 2011 1:43 PM
Subject: Bullet train and ship missing

You know it's a Bad day when a train gets washed away!

Japan tsunami sparks fears that bullet train and cruise ship have disappeared, hundreds missing

BY LARRY MCSHANE
DAILY NEWS STAFF WRITER

Friday, March 11th 2011, 12:08 PM



Yamaguchi/Bloomberg

A bullet train in Japan (not shown) is feared missing after the tsunami.

- Less stress, more \$ while exploring Japan
-

The 33-foot tsunami that pounded Japan reportedly swept away a ship carrying 100 people and left one of the country's signature bullet trains missing.

The Kyodo news service reported the missing ship and train, although details were scarce about both. Video showed the black water knocking cars, trains and boats around as if they were toys.

PHOTOS: TSUNAMI LEVELS JAPAN

DM/27

GRAPHIC: ANATOMY OF A TSUNAMI
AMAZING PIC: WHIRLPOOL ENSNARES BOAT

The train - with hundreds of passengers - disappeared on a line outside the coastal city of Sendai, according to Kyodo. Another train was derailed by the powerful waves. There were reports of hundreds of bodies found in Sendai, the city hit hardest by the natural disaster.

The earthquake also knocked out train service in Tokyo, stranding an estimated 20,000 commuters.

The tsunami also claimed a ship with 100 people aboard, Kyodo reported.

"I wish to have no connection with any ship that does not sail fast, for I intend to go in harm's way."
CAPT John Paul Jones, USN
16 Nov 1778

ODriscoll, James

From: John M Fusco (b)(6)
Sent: Friday, March 11, 2011 1:36 PM
Subject: Tsunami causing damage in California

Waves destroy Crescent City Harbor docks

Times-Standard

Posted: 03/11/2011 10:03:13 AM PST

Officials in Crescent City are reporting damage after tsunami waves began hitting the harbor this morning.

"The harbor has been destroyed," said Crescent City Councilman Rich Enea in a phone interview at 9:45 a.m. "Thirty-five boats have been crushed and the harbor has major damage. Major damage."

Del Norte County Sheriff Cmdr. Bill Steven said most of the docks at the harbor are gone. Additionally, a recent surge filled the entire harbor and they are expecting that some of the other waves could send water into the harbor's parking lot, Steven said.

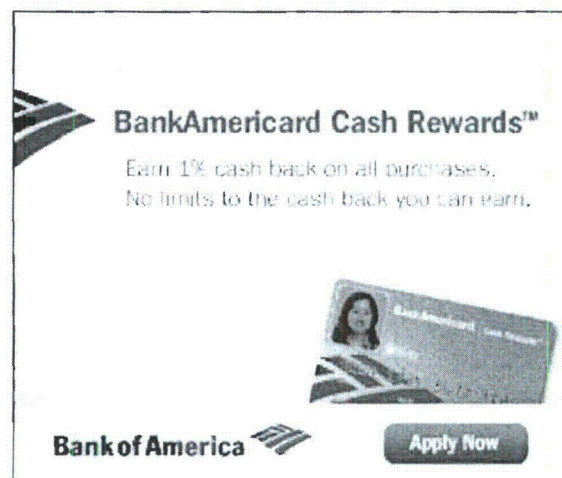
Enea said no injuries have been reported at this point, which he attributed to plenty of tsunami preparedness exercises and the diligent work of first responders in sealing off the harbor.

The councilman said he's heard about 100 people have shown up to a Red Cross shelter at Del Norte High School. He said tsunami waters have made it near the doors of the Crescent City Cultural Center, and he fears the worst is yet to come.

"There's supposed to be larger surges coming in," he said. "We're just trying to ride out the worst of these surges."


According to the Caltrans website, some sections of U.S. Highway 101 are currently closed due to the tsunami alert: at Kane Road that is 11.3 miles north of Trinidad, at the Humboldt and Del Norte county lines, at Sand Mine Road that is 1.4 miles south of Crescent City, and at Washington Road that is 1.2 miles north


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of Crescent City. Drivers are advised to use alternate routes.

Dm/28

ODriscoll, James

From: John M Fusco (b)(6)
Sent: Friday, March 11, 2011 1:31 PM
To: ODriscoll, James
Subject: Good map showing quake and nuke plants

<http://www.bbc.co.uk/news/world-asia-pacific-12716870>

"I wish to have no connection with any ship that does not sail fast, for I intend to go in harm's way."
CAPT John Paul Jones, USN
16 Nov 1778

DM/29

ODriscoll, James

From: John M Fusco (b)(6)
Sent: Friday, March 11, 2011 1:26 PM
To: ODriscoll, James
Subject: Japan: 11 nuclear reactors shut down

You know all if the anti-nuke crowd is going to jump all over this...

Japan: 11 nuclear reactors shut down

VIDEO



Japan Prime Minister feels earthquake

Japanese Prime Minister, Naoto Kan, and members of parliament were in session when the magnitude 8.9 earthquake hit the country. (March 11)

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DM/30

author will be removed. Finally, we will take steps to block users who violate any of our posting standards, terms of use or privacy policies or any other policies governing this site. Please review the [full rules](#) governing commentaries and discussions. You are fully responsible for the content that you post.

By [Steven Mufson](#)

Washington Post Staff Writer

Friday, March 11, 2011; 12:55 PM

Japan's Nuclear and Industrial Safety Agency (NISA) said Friday that a fire broke out at the Onagawa nuclear power plant but was later extinguished.

The plant is about 45 miles north of the city of Sengai, which was badly damaged by the [deadly earthquake and tsunami](#) that hit Japan Friday afternoon. Sendai is the population center nearest the epicenter of the quake, and Japan's Kyodo News agency said that more than 200 bodies had been found so far near the city.

The three reactors at the Onagawa site remained closed. Eleven of the country's nuclear reactors have been shut down.

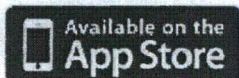
The key buildings in the Onagawa plant are about 15 meters above sea level, according to the Web site of Tohoku Electric Power, owner of the plant. The company said that was about twice the height of the previous highest tsunami. The non-working backup generators at the plant were damaged by water from the tsunami, according to Glenn L. McCullough Jr., former head of the Tennessee Valley Authority who has been in touch with government experts in Japan.

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Just hours after the quake, NISA also declared a heightened state of alert at the Fukushima Daiichi nuclear power plant, according to the International Atomic Energy Agency. NISA later told the energy agency that the plant has been shut down and that no release of radiation has been detected. People living within 1.2 miles of the plant were told to evacuate the area.

Secretary of State Hillary Rodham Clinton said Friday morning that U.S. Air Force planes in Japan had delivered coolant to a nuclear power plant affected by the quake.

"They have very high engineering standards, but one of their plants came under a lot of stress with the earthquake and didn't have enough coolant," she said, "and so Air Force planes were able to deliver that." It was not immediately clear which plant received the coolant.

A group called Beyond Nuclear, devoted to highlighting the perils of nuclear power, said it received an e-mail from Philip White of the Citizens Nuclear Information Center in Tokyo saying that the Fukushima nuclear power plants lost power and that all the backup diesel generators were also "out of action." The group said that in order to provide power to cool the reactors, emergency generators were being trucked there by the plant's owner, Tokyo Electric Power Co.

"The multi-reactor Fukushima atomic power plant is now relying on battery power, which will only last around eight hours," said Kevin Kamps, a specialist in nuclear waste at Beyond Nuclear. "The danger is the very thermally hot reactor cores at the plant must be continuously cooled for 24 to 48 hours. Without any electricity, the pumps won't be able to pump water through the hot reactor cores to cool them."

Japanese authorities told the IAEA that the Onagawa, Fukushima-Daini and Tokai nuclear power plants shut down automatically, and no radiation release has been detected. The plants have multiple nuclear reactors.

The IAEA said it is seeking details on Fukushima Daiichi and other nuclear power plants and research reactors, including information on off-site and on-site electrical power supplies, cooling systems and the condition of the reactor buildings. Nuclear fuel requires continued cooling even after a plant is shut down, the IAEA noted.

Staff writer Mary Beth Sheridan contributed to this report.

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North Korean Prison Camps

Interactive map of five major prison camps in the country.

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"I wish to have no connection with any ship that does not sail fast, for I intend to go in harm's way."

CAPT John Paul Jones, USN

16 Nov 1778

ODriscoll, James

From: John Fusco (b)(6)
Sent: Friday, March 11, 2011 7:04 AM
Subject: Md. man accused in scheme to smuggle restricted items to Pakistan

Md. man accused in scheme to smuggle restricted items to Pakistan

Yeganeh June Torbati
The Baltimore Sun
March 10, 2011

A Pakistani man living in Maryland has been charged with scheming to smuggle materials and equipment used in nuclear processing to agencies in his home country, federal officials announced Wednesday.

Nadeem Akhtar, 45, of Silver Spring is accused in a grand jury indictment of buying the materials from U.S. companies and shipping them to blacklisted Pakistani agencies by lying to shipping companies about what the packages contained between 2005 and 2010.

Some of the goods Akhtar and an unnamed co-defendant arranged to ship to sites in Pakistan, prosecutors said, include radiation-detection equipment, resins used to purify coolant water in nuclear power plants, calibration devices and selector switches, which fall under Department of Commerce rules that closely regulate the export of "dual-use items," or materials that potentially have both commercial and nuclear purposes.

To get around those federal regulations, prosecutors allege, Akhtar falsified invoices and purchase orders and lied about to whom the materials were being shipped. Prosecutors say he received his instructions for what to purchase and how to hide the smuggling operation from a co-defendant who received orders from Pakistani agencies. The co-defendant's name was redacted in the indictment.

Many of the materials were allegedly smuggled to the Chasma Nuclear Power Plant I in Kundian, Pakistan, and the Space and Upper Atmosphere Research Commission, the country's space agency. In December, the United States fined a Chinese subsidiary of PPG Industries Inc. for illegally exporting materials to another plant at the Chasma site, according to news reports.

Because Pakistan has not signed the nuclear Non-Proliferation Treaty, the sale of nuclear materials to the country is heavily restricted. Tensions have arisen in the past year between the United States and China over the latter's proposed sale of equipment to Pakistan.

In return for his services, Akhtar received a commission of between 5 and 7.5 percent of the cost of each item, according to prosecutors. If convicted, he could face up to 20 years in prison for the unlawful export of goods and for conspiracy to commit money laundering, with shorter potential sentences for other charges.

The grand jury indictment was returned in March 2010 but only unsealed Wednesday. Akhtar faces a detention hearing Thursday afternoon in federal court in Baltimore.

--
*"I wish to have no connection with any ship that does not sail fast,
for I intend to go in harm's way."*

CAPT John Paul Jones, USN
16 Nov 1778

ODriscoll, James

From: John Fusco (b)(6)
Sent: Friday, March 11, 2011 7:34 AM
To: ODriscoll, James; James O'Driscoll
Subject: Yikes...

Quake-Hit Japan Declares Nuclear Emergency, Says No Radiation Leaks
March 11, 2011

TOKYO (Kyodo)--Japan declared a state of atomic power emergency after the country was hit by its largest-ever magnitude earthquake, while saying no radiation leaks have been detected at or near any nuclear power plants as of Friday evening.

The International Atomic Energy Agency is scrambling for details from contacts with Japan's industry ministry, while saying in a statement that at least four nuclear power plants "closest to the quake have been safely shut down" after the 2:46 p.m. quake with a magnitude 8.8.

According to the ministry, a total of 11 nuclear reactors were automatically shut down at the Onagawa plant, Fukushima No. 1 and No. 2 plants and Tokai No. 2 plant after the biggest-magnitude quake in the country's modern history.

The ministry said there were no immediate reports from monitoring posts of abnormalities near the nuclear plants. But a fire started at a building housing the turbine at the Onagawa plant in Miyagi operated by Tohoku Electric Power Co., the company said, denying it detected any signs of radiation leaks.

Prime Minister Naoto Kan made the declaration so authorities can easily implement emergency relief measures, Chief Cabinet Secretary Yukio Edano told a press conference.

Residents near nuclear plants do not need to take any special actions, the top government spokesman said.

Kan said earlier Friday, "Parts of nuclear plants were automatically shut down but we haven't confirmed any effects induced by radioactive materials outside the facilities."

Tokyo Electric Power Co. said the system to cool reactor cores in case of emergency stopped at the No. 1 and No. 2 reactors of its Fukushima No. 1 nuclear plant.

Water spilled from pools containing fuel rods at the Kashiwazaki-Kariwa plant on the Sea of Japan coast in Niigata Prefecture and the Onagawa plant, the operators said, saying they saw no signs suggesting radiation leaks.

Hokkaido Electric Power Co. reported no problems at its Tomari No. 1, No. 2 and No. 3 plants on the northernmost main island.

There were no immediate signs of any problems at the Hamaoka nuclear plant on the Pacific coast in Shizuoka Prefecture, southwest of Tokyo, the prefectural government said.

DM/32

ODriscoll, James

From: ODriscoll, James
Sent: Friday, March 11, 2011 8:30 AM
To: 'John Fusco'
Subject: RE: this can't be good...

No its not. The problem is at the oldest reactor. 6 reactors at the site, two under construction. First nuclear emergency declaration for Japan, hopefully its precautionary.

From: John Fusco [mailto:(b)(6)]
Sent: Friday, March 11, 2011 8:23 AM
To: ODriscoll, James
Subject: Re: this can't be good...

http://www.msnbc.msn.com/id/42025882/ns/world_news-asiapacific/

On Fri, Mar 11, 2011 at 8:20 AM, ODriscoll, James <James.ODriscoll@nrc.gov> wrote:

John.

Where is the link?

From: John Fusco [mailto:(b)(6)]
Sent: Friday, March 11, 2011 8:18 AM
To: ODriscoll, James; James O'Driscoll
Subject: this can't be good...

BREAKING NEWS: Japan issues evacuation order to thousands of residents near nuclear plant

--
"I wish to have no connection with any ship that does not sail fast,

for I intend to go in harm's way."

CAPT John Paul Jones, USN
16 Nov 1778



DM/33

ODriscoll, James

From: John Fusco (b)(6)
Sent: Friday, March 11, 2011 8:37 AM
To: ODriscoll, James
Subject: Re: SGU no more

that will be something, get to see the galactica in her prime taking on the toasters. i hope it takes off.

On Fri, Mar 11, 2011 at 8:35 AM, ODriscoll, James <James.ODriscoll@nrc.gov> wrote:

I think the new show is "blood and chrome" or something like that. Take place during the first war.

From: John Fusco (mailto:(b)(6))
Sent: Friday, March 11, 2011 8:32 AM
To: ODriscoll, James
Subject: Re: SGU no more

haven't heard about that. the sequel, caprica, was also cancelled

On Fri, Mar 11, 2011 at 8:30 AM, ODriscoll, James <James.ODriscoll@nrc.gov> wrote:

Did not hear. SG had a pretty good run. over 10 years in various flavors. You hear there will be another BSG series?

From: John Fusco (mailto:(b)(6))
Sent: Friday, March 11, 2011 7:45 AM
To: ODriscoll, James; James O'Driscoll
Subject: SGU no more

So, did you hear they cancelled SGU? Too bad, it is one of the few good sci-fi shows left on tv.

--

"I wish to have no connection with any ship that does not sail fast.

for I intend to go in harm's way."

CAPT John Paul Jones, USN
16 Nov 1778

DM/34

ODriscoll, James

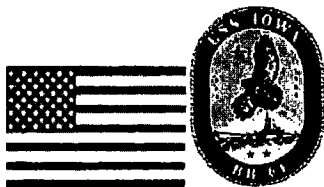
From: John Fusco (b)(6)
Sent: Friday, March 11, 2011 8:35 AM
To: ODriscoll, James
Subject: unbelievable footage of the tsunamis...

tsunami videos...<http://www.cnn.com/video/#/video/world/2011/03/11/vo.quake.cars.water.mov.avn>

--

*"I wish to have no connection with any ship that does not sail fast,
for I intend to go in harm's way."*

CAPT John Paul Jones, USN
16 Nov 1778



DM/35

ODriscoll, James

From:
Sent:
Subject:

John M Fusco (b)(6)
Friday, March 11, 2011 12:45 PM
Some interesting numbers...

"Military spending has not amounted to more than 25 percent of the federal budget since 1989 and the end of the Cold War. Last year, even as the United States was fighting two costly wars, the Pentagon accounted for only about 19 percent of all federal spending (or about \$660 billion). The big three of social programs collectively accounted for a much bigger share of spending: Social Security (about 19 percent), Medicare (about 12 percent), and Medicaid (about seven percent)."

The Global Budget Race

<http://www.wilsonquarterly.com/article.cfm?AID=1709>

"I wish to have no connection with any ship that does not sail fast, for I intend to go in harm's way."
CAPT John Paul Jones, USN
16 Nov 1778

DM/36

ODriscoll, James

From: John Fusco (b)(6)
Sent: Friday, March 11, 2011 7:35 AM
To: ODriscoll, James; James O'Driscoll
Subject: Fire breaks out at Japanese nuclear plant: Kyodo

Fire breaks out at Japanese nuclear plant: Kyodo
(AFP) – 11 March 2011

TOKYO — A fire broke out in the turbine building of Onagawa nuclear plant in Miyagi Prefecture on Friday, Kyodo News reported, after an 8.9-magnitude earthquake struck Japan and triggered a huge tsunami.

It was not immediately clear if there was a risk of a radioactive leak as a result of the fire at the plant operated by Tohoku Electric Power. Miyagi prefecture was one of the areas worst hit by the tsunami.

Kyodo also reported that an emergency core-cooling unit had been activated at Fukushima nuclear plant, without giving further details.

Earlier Friday Prime Minister Naoto Kan had said no radiation leaks have been detected from Japan's nuclear power stations after the massive quake struck the country.

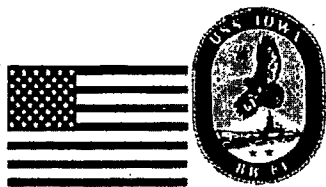
Four Japanese nuclear power plants closest to the epicentre of the quake have been safely shut down, the UN atomic watchdog said Friday.

The quake struck just under 400 kilometres (250 miles) northeast of Tokyo, the US Geological Survey said. It was followed by more than a dozen aftershocks, one as strong as 7.1.

--

*"I wish to have no connection with any ship that does not sail fast,
for I intend to go in harm's way."*

CAPT John Paul Jones, USN
16 Nov 1778



DM/37

ODriscoll, James

From: John M Fusco (b)(6)
Sent: Friday, March 11, 2011 2:45 PM
To: ODriscoll, James
Subject: Re: @BreakingNews, 3/11/11 13:39

Cool, thanks

"I wish to have no connection with any ship that does not sail fast, for I intend to go in harm's way."
CAPT John Paul Jones, USN
16 Nov 1778

On Mar 11, 2011, at 14:34, "ODriscoll, James" <James.ODriscoll@nrc.gov> wrote:

Best source:

<http://www.tepco.co.jp/en/index-e.html>

From: John M Fusco (b)(6)
Sent: Friday, March 11, 2011 2:30 PM
To: ODriscoll, James
Subject: @BreakingNews, 3/11/11 13:39



Breaking News (@BreakingNews)

3/11/11 13:39

Fukushima update: Japanese authorities will release radioactive vapor to ease pressure at nuclear reactor - AP

"I wish to have no connection with any ship that does not sail fast, for I intend to go in harm's way."

DM/38

ODriscoll, James

From: ODriscoll, James
Sent: Friday, March 11, 2011 2:46 PM
To: 'John M Fusco'
Subject: RE: @BreakingNews, 3/11/11 13:39

Looks like they have a leak into the containment, but latest press release says no indication.

From: John M Fusco (b)(6)
Sent: Friday, March 11, 2011 2:30 PM
To: ODriscoll, James
Subject: @BreakingNews, 3/11/11 13:39



Breaking News (@BreakingNews)

3/11/11 13:39

Fukushima update: Japanese authorities will release radioactive vapor to ease pressure at nuclear reactor - AP

"I wish to have no connection with any ship that does not sail fast, for I intend to go in harm's way."
CAPT John Paul Jones, USN
16 Nov 1778

DM/39

ODriscoll, James

From: ODriscoll, James
Sent: Friday, March 11, 2011 2:54 PM
To: 'John M Fusco'
Subject: RE: @BreakingNews, 3/11/11 13:39

Hey, check this one out- Clinton: AF planes deliver coolant?? Methinks she needs a fact check...
<http://www.timescolonist.com/technology/Japan+earthquake+update+military+delivers+coolant+ailing+Fukushima/4424106/story.html>

From: John M Fusco (b)(6)
Sent: Friday, March 11, 2011 2:51 PM
To: ODriscoll, James
Subject: Re: @BreakingNews, 3/11/11 13:39

I am amazed the plants that close to the epicenter held together as well as they did. The pucker factor for the workers in the plant must be huge right now!

"I wish to have no connection with any ship that does not sail fast, for I intend to go in harm's way."
CAPT John Paul Jones, USN
16 Nov 1778

On Mar 11, 2011, at 14:46, "ODriscoll, James" <James.ODriscoll@nrc.gov> wrote:

Looks like they have a leak into the containment, but latest press release says no indication.

From: John M Fusco (b)(6)
Sent: Friday, March 11, 2011 2:30 PM
To: ODriscoll, James
Subject: @BreakingNews, 3/11/11 13:39



Breaking News (@BreakingNews)

3/11/11 13:39

Fukushima update: Japanese authorities will release radioactive vapor to ease pressure at nuclear reactor - AP

DM/40

ODriscoll, James

From: John M Fusco (b)(6)
Sent: Friday, March 11, 2011 3:08 PM
To: ODriscoll, James
Subject: Re: @BreakingNews, 3/11/11 13:39

That sounds about right. They can stick a bunch of those flexible fuel bladders in C17s and C130s.

"I wish to have no connection with any ship that does not sail fast, for I intend to go in harm's way."
CAPT John Paul Jones, USN
16 Nov 1778

On Mar 11, 2011, at 15:01, "ODriscoll, James" <James.ODriscoll@nrc.gov> wrote:

Maybe we delivered fuel to their emergency diesels? Backup generators?

From: John M Fusco (b)(6)
Sent: Friday, March 11, 2011 3:00 PM
To: ODriscoll, James
Subject: Re: @BreakingNews, 3/11/11 13:39

Right, I thought it was strange. What do you think?

"I wish to have no connection with any ship that does not sail fast, for I intend to go in harm's way."

CAPT John Paul Jones, USN

16 Nov 1778

On Mar 11, 2011, at 14:53, "ODriscoll, James" <James.ODriscoll@nrc.gov> wrote:

Hey, check this one out- Clinton: AF planes deliver coolant?? Methinks she needs a fact check...

DM/41

<http://www.timescolonist.com/technology/Japan+earthquake+update+military+delivers+coolant+ailing+Fukushima/4424106/story.html>

From: John M Fusco (b)(6)
Sent: Friday, March 11, 2011 2:51 PM
To: ODriscoll, James
Subject: Re: @BreakingNews, 3/11/11 13:39

I am amazed the plants that close to the epicenter held together as well as they did. The pucker factor for the workers in the plant must be huge right now!

"I wish to have no connection with any ship that does not sail fast, for I intend to go in harm's way."

CAPT John Paul Jones, USN

16 Nov 1778

On Mar 11, 2011, at 14:46, "ODriscoll, James" <James.ODriscoll@nrc.gov> wrote:

Looks like they have a leak into the containment, but latest press release says no indication.

From: John M Fusco (b)(6)
Sent: Friday, March 11, 2011 2:30 PM
To: ODriscoll, James
Subject: @BreakingNews, 3/11/11 13:39



Breaking News (@BreakingNews)

3/11/11 13:39


Fukushima update: Japanese authorities will release radioactive vapor to ease pressure at nucle

ODriscoll, James

From: ODriscoll, James
Sent: Friday, March 11, 2011 2:42 PM
To: 'John M Fusco'
Subject: RE: @AndreaTOAP, 3/11/11 13:33

Shorter flights to Japan.

From: John M Fusco (b)(6)
Sent: Friday, March 11, 2011 2:40 PM
Subject: @AndreaTOAP, 3/11/11 13:33

 **Andrea Thompson (@AndreaTOAP)**
3/11/11 13:33

Scientists on CNN now is saying entire island of #Honshu #Japan moved eastward by 8 feet (2.3 m)

"I wish to have no connection with any ship that does not sail fast, for I intend to go in harm's way."
CAPT John Paul Jones, USN
16 Nov 1778

DM/42

ODriscoll, James

From:
Sent:
Cc:

(b)(6)

Subject:

FW: ORDER TO ACCOUNT FOR THE NAVY FAMILY ICO JAPAN EARTHQUAKE

Importance:

High

Unit Leaders,

(b)(6)

(b)(6)

DM/43

UNCLASSIFIED//

(b)(6)

(b)(6)

(b)(6)

ODriscoll, James

From:
Sent:
Cc:

(b)(6)

Subject:
Attachments:

NOSC Washington AIRMAIL - 3 March

(b)(6)

Unit Leaders,

(b)(6)

(b)(6)

ODriscoll, James

From: ODriscoll, James
Sent: Friday, March 11, 2011 9:52 AM
To: 'Thomas Teuschl'
Subject: RE: help!
Attachments: image002.png

Hey Tom,

Everything is pretty good here. Still getting trained up on how to do the watch in the unit. Seems these guys may be called up from time to time. On a short string for this thing in Libya. (b)(6)

(b)(6)

From: (b)(6)

Sent: Wednesday, March 09, 2011 5:07 PM
To: ODriscoll, James
Subject: help!

Jim,

Hope you are doing well.

Did the CO send you a copy of your last fitrep finally?

If so, would you mind if I plagerized the XO/ACOS manpower bullets?

thx

TT

DM/45

ODriscoll, James

From: ODriscoll, James
Sent: Friday, March 11, 2011 9:32 AM
To: (b)(6)
Cc: (b)(6)
Subject: RE: Exercise update

(b)(6)

(b)(6)

(b)(6)

(b)(6)

(b)(6)

ODriscoll, James

From: John Fusco (b)(6)
Sent: Friday, March 11, 2011 9:21 AM
To: ODriscoll, James
Subject: Re: battle la

you gotta get out once in a while my friend!

On Fri, Mar 11, 2011 at 9:19 AM, ODriscoll, James <James.ODriscoll@nrc.gov> wrote:

Would love to see in the theater. but will probably put it on the Netflix.

From: John Fusco (b)(6)
Sent: Friday, March 11, 2011 8:58 AM
To: ODriscoll, James
Subject: battle la

you gonna check out Battle: LA? looks damn good

--

"I wish to have no connection with any ship that does not sail fast.

for I intend to go in harm's way."

CAPT John Paul Jones, USN
16 Nov 1778



--
"I wish to have no connection with any ship that does not sail fast,
for I intend to go in harm's way."

CAPT John Paul Jones, USN
16 Nov 1778

DM/47

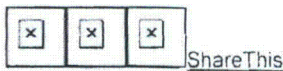
ODriscoll, James

From: John M Fusco (b)(6)
Sent: Saturday, March 12, 2011 8:19 PM
To: ODriscoll, James; James G O'Driscoll
Subject: Japanese Government Confirms Meltdown

Japanese Government Confirms Meltdown

March 12, 2011 | 2148 GMT

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Japan's Nuclear and Industrial Safety Agency (NISA) said March 12 that the explosion at the Fukushima Daiichi No. 1 nuclear plant could only have been caused by a meltdown of the reactor core, Japanese daily Nikkei reported. This statement seemed somewhat at odds with Japanese Chief Cabinet Secretary Yukio Edano's comments earlier March 12, in which he said "the walls of the building containing the reactor were destroyed, meaning that the metal container encasing the reactor did not explode."

NISA's statement is significant because it is the government agency that reports to the Agency for Natural Resources and Energy within the Ministry of Economy, Trade and Industry. NISA works in conjunction with the Atomic Energy Commission. Its role is to provide oversight to the industry and is responsible for signing off construction of new plants, among other things. It has been criticized for approving nuclear plants on geological fault lines and for an alleged conflict of interest in regulating

DM/48

the nuclear sector. It was NISA that issued the order for the opening of the valve to release pressure — and thus allegedly some radiation — from the Fukushima power plant.

NISA has also overseen the entire government response to the nuclear reactor problems following the Tohoku earthquake and tsunami. It is difficult to determine at this point whether the NISA statement is accurate, as the Nikkei report has not been corroborated by others. It is also not clear from the context whether NISA is stating the conclusions of an official assessment or simply making a statement. However, the Tokyo Electric Power Co. (TEPCO), the operator of the Fukushima nuclear plant, also said that although it had relieved pressure, nevertheless some nuclear fuel had melted and further action was necessary to contain the pressure.

If this report is accurate, it would not be the first time statements by NISA and Edano have diverged. When Edano earlier claimed that radiation levels had fallen at the site after the depressurization efforts, NISA claimed they had risen due to the release of radioactive vapors.

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Sent from my iPad

ODriscoll, James

From:

(b)(6)

Sent:

Saturday, March 12, 2011 7:38 AM

To:

(b)(6)

Subject:

FW: ORDER TO ACCOUNT FOR THE NAVY FAMILY ICO JAPAN EARTHQUAKE

Importance:

High

(b)(6)

(b)(6)

(b)(6)

(b)(6)

ODriscoll, James

From: ODriscoll, James
Sent: Saturday, March 12, 2011 6:43 AM
To: (b)(6)
Subject: FW: ORDER TO ACCOUNT FOR THE NAVY FAMILY ICO JAPAN EARTHQUAKE
Importance: High

(b)(6)

(b)(6)

(b)(6)

***** UNCLASSIFIED// *****

DM/50

(b)(6)



(b)(6)



(b)(6)

(b)(6)

(b)(6)

ODriscoll, James

From:

(b)(6)

Sent:

Saturday, March 12, 2011 8:50 AM

To:

(b)(6)

ODriscoll, James

Subject:

March 17 ECAT Exercise

(b)(6)

(b)(6)

DM/51

(b)(6)

ODriscoll, James

From: Scott Maley (b)(6)
Sent: Saturday, March 12, 2011 9:03 AM
To: ODriscoll, James
Subject: RE: Exercise update

(b)(6)

(b)(6)

(b)(6)

(b)(6)

(b)(6)

ODriscoll, James

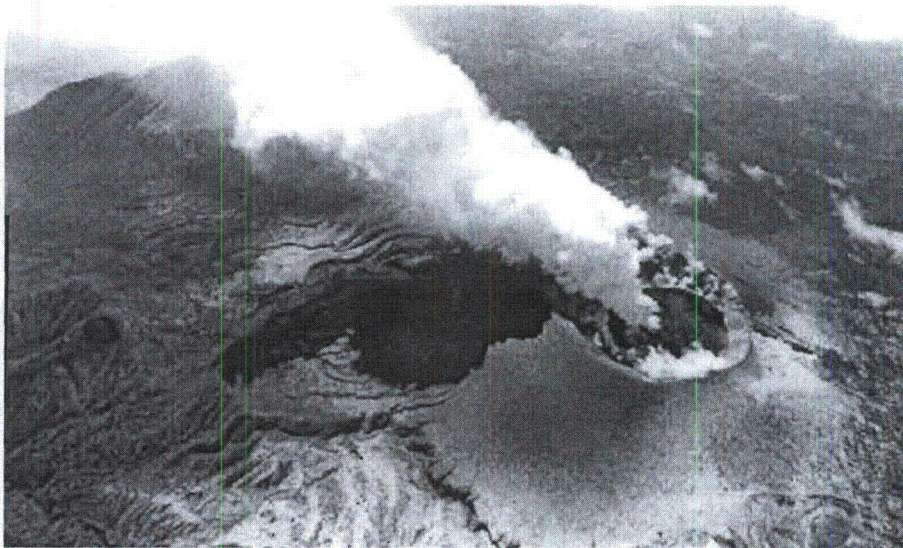
From:
Sent:
Subject:

John M Fusco (b)(6)
Sunday, March 13, 2011 10:47 PM
They just can't catch a break...

Hundreds flee in Japan after Shinmoedake volcano begins spewing ash, boulders

March 13, 2011 16:30

By HELEN KENNEDY, DAILY NEWS STAFF WRITER



Earthquake, tsunami, nuclear plant meltdowns -- as if the people of Japan didn't have enough to cope with, a volcano began erupting Sunday.

Hundreds of people were forced to flee when the Shinmoedake volcano on the southern island of Kyushu began spewing ash and boulders.

The explosion from the eruption could be heard miles away and an ash plume extended two miles into the sky.

Shinmoedake, one of several volcanic peaks in the Kirishima mountain range, is 950 miles from the epicenter of Friday's earthquake and scientists weren't sure if the quake triggered the eruption.

Eruptions and quakes are common in Japan's "ring of fire."

The volcano erupted in January - the first major seismic activity on the mountain in 52 years. Scientists say lava had been building up in recent weeks.

Shinmoedake is famous for standing in as the villain's secret rocket base in the 1967 James Bond film, "You Only Live Twice."

"I wish to have no connection with any ship that does not sail fast, for I intend to go in harm's way."

DM/53

ODriscoll, James

From: John M Fusco (b)(6)
Sent: Sunday, March 13, 2011 10:42 PM
Subject: India becomes world's largest arms importer, seeking to counter China, become global power

the India v China regional competition will be something to watch in the coming years...

India becomes world's largest arms importer, seeking to counter China, become global power

By RAVI NESSMAN, Sunday, March 13, 2011

NEW DELHI (AP) — In its race to join the club of international powers, India has reached another milestone — it's now the world's largest weapons importer.

A Swedish think tank that monitors global arms sales said Monday that India's weapons imports had overtaken China's, as the South Asian nation pushes ahead with plans to modernize its military, counter Beijing's influence and gain international clout.

"India has ambitions to become first a continental and (then) a regional power," said Rahul Bedi, a South Asia analyst with London-based Jane's Defense Weekly. "To become a big boy, you need to project your power."

According to the report from the Stockholm International Peace Research Institute, India accounted for 9 percent of all international arms imports in the period from 2006 to 2010, and it is expected to keep the top spot for the foreseeable future.

"Just from what they have already ordered, we know that in the coming few years India will be the top importer," said Siemon Wezeman, a senior fellow at the institute.

Indian Defense Ministry spokesman Sitanshu Kar declined to comment on the report before he had a chance to read it.

China dropped to second place, with 6 percent of global imports, as it continued to build up its domestic arms industry, something India has so far failed to do, Wezeman said.

The United States was the largest arms exporter, followed by Russia and Germany, according to the report.

The institute measures arms transactions over a five-year period to take into account the long time lag between orders and delivery of arms.

India's investment comes amid its rising concerns about China's regional power and its designs over vital Indian Ocean shipping lanes, which New Delhi sees as part of its sphere of influence.

It is spending billions of dollars on fighter jets and aircraft carriers to modernize its air force and navy. Tensions also linger over unresolved border issues with China which led to war in 1962.

India also remains in its traditional faceoff with neighboring Pakistan, with which it has fought three wars.

DM/54

With its booming economy and growing power, India has been pushing for a greater international role, including a permanent seat on the U.N. Security Council. To buttress its claim, Bedi said, a modernized Indian military would need to take part in more global operations, helping countries suffering from natural calamities and joining peacekeeping missions.

India's defense budget for the coming year is 1.5 trillion rupees (\$32.5 billion), a 40 percent increase from two years before. It imports more than 70 percent of its arms.

The vast majority of those imports, 82 percent, come from Russia, which has long been India's supplier of choice, the report said. But other countries have been pushing for a chunk of the lucrative market, with world leaders streaming here in recent months, in part to push defense deals.

During British Prime Minister David Cameron's July visit, the two countries announced a nearly \$1.1 billion deal for India to buy 57 Hawk advanced trainer jets. During President Barack Obama's November visit, a \$4.1 billion sale of 10 C-17 transport aircraft was announced.

France and India moved closer to finalizing a \$2.1 billion Mirage 2000 fighter aircraft upgrade deal during President Nicolas Sarkozy's December visit, and a few weeks later India and Russia agreed to jointly develop a fifth generation fighter aircraft during President Dmitry Medvedev's visit.

India is awaiting delivery of a \$2.3 billion rebuilt aircraft carrier from Russia — as it builds another carrier itself — and has ordered six submarines worth \$4.5 billion from France.

With India expected to spend \$80 billion over the next decade to upgrade its military, more plums await.

India is in the market to buy 126 fighter jets, a deal worth \$11 billion, and about 200 helicopters worth another \$4 billion. It also has plans to buy large amphibious landing ships at \$300 million to \$500 million each and is discussing another \$10 billion submarine order, Wezeman said.

"The kind of purchases that India is buying, no country in the world buys," Bedi said. "What is in the pipeline is huge."

India last topped the list in 1992, just after its main arms supplier, the Soviet Union, collapsed.

Through much of the 1990s and early 2000s, the Indian military stopped making major purchases, leaving the country with an aging and increasingly decrepit arsenal.

When the country refocused on its military in recent years, the needs were enormous, said Ajai Shukla, an Indian military analyst and former army colonel.

"A lot of this buying you are seeing is this backlog of replacement that you should have seen happening in a phased and staggered manner," he said. "It's all happening now in a bunch."

"I wish to have no connection with any ship that does not sail fast,
for I intend to go in harm's way."

CAPT John Paul Jones, USN

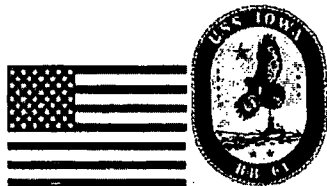
16 Nov 1778

ODriscoll, James

From: John Fusco (b)(6)
Sent: Sunday, March 13, 2011 4:27 PM
Subject: Great before and after Japan imagery...

<http://www.abc.net.au/news/events/japan-quake-2011/beforeafter.htm>

--
*"I wish to have no connection with any ship that does not sail fast.
for I intend to go in harm's way."*
CAPT John Paul Jones, USN
16 Nov 1778



DM/55

ODriscoll, James

From: John M Fusco, (b)(6)
Sent: Sunday, March 13, 2011 4:22 PM
To: ODriscoll, James; James G O'Driscoll
Subject: Battle LA

Movie was great. They portrayed the Marines very well, which frankly amazed me. I was waiting for the usual caricatures and idiots. They somehow got it right. They even had a Navy corpsman for the whole time as well as an Air Force intel tech sergeant. A couple of Army guys show up too, but they don't last long. Having just been out in Santa Monica last summer it was cool watching them lay waste to the place. One of the things I liked was that they didn't try to give a bunch of futuristic weapons to the Marines or the US military. They fought the aliens with what we have in our inventory. All around well done for a big action movie. If you get the chance, get a baby sitter and go check it out on the big screen.

"I wish to have no connection with any ship that does not sail fast, for I intend to go in harm's way."
CAPT John Paul Jones, USN
16 Nov 1778

Sent from my iPad

DM/56

ODriscoll, James

From:

(b)(6)

Sent:

Sunday, March 13, 2011 12:19 PM

To:

(b)(6)

Cc:

Subject:

FW: DADT TIER III TRAINING

(b)(6)

(b)(6)

DM/57

ODriscoll, James

From:

(b)(6)

Sent:

Sunday, March 13, 2011 8:59 AM

To:

(b)(6)

Subject:

READINESS BRIEF

(b)(6)

DM/58

(b)(6)

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(b)(6)

ODriscoll, James

From:

(b)(6)

Sent:

Sunday, March 13, 2011 5:41 PM

To:

(b)(6)

Subject:

Japan and Libyan CAT Standup WARNORD and Update

(b)(6)

DM/59

ODriscoll, James

From:

(b)(6)

Sent:

Sunday, March 13, 2011 4:52 PM

To:

(b)(6)

Subject:

RE: ORDER TO ACCOUNT FOR THE NAVY FAMILY ICO JAPAN EARTHQUAKE

(b)(6)

(b)(6)

DM/60

(b)(6)

(b)(6)

(b)(6)

(b)(6)

ODriscoll, James

From: John M Fusco (b)(6)
Sent: Monday, March 14, 2011 7:17 AM
To: ODriscoll, James
Subject: Re: Battle LA

LOL!! There you go!

"I wish to have no connection with any ship that does not sail fast, for I intend to go in harm's way."
CAPT John Paul Jones, USN
16 Nov 1778

Sent from my iPad

On Mar 14, 2011, at 7:12, "ODriscoll, James" <James.ODriscoll@nrc.gov> wrote:

> Sounds good. I saw Eat Pray Love last night. Kelly owes me.

>

> ---Original Message---

> From: John M Fusco (b)(6)

> Sent: Sunday, March 13, 2011 4:22 PM

> To: ODriscoll, James; James G O'Driscoll

> Subject: Battle LA

>

> Movie was great. They portrayed the Marines very well, which frankly amazed me. I was waiting for the usual caricatures and idiots. They somehow got it right. They even had a Navy corpsman for the whole time as well as an Air Force intel tech sergeant. A couple of Army guys show up too, but they don't last long. Having just been out in Santa Monica last summer it was cool watching them lay waste to the place. One of the things I liked was that they didn't try to give a bunch of futuristic weapons to the Marines or the US military. They fought the aliens with what we have in our inventory. All around well done for a big action movie. If you get the chance, get a baby sitter and go check it out on the big screen.

>

> "I wish to have no connection with any ship that does not sail fast,

> for I intend to go in harm's way."

> CAPT John Paul Jones, USN

> 16 Nov 1778

>

>

> Sent from my iPad

DM/b1

ODriscoll, James

From: John M Fusco (b)(6)
Sent: Monday, March 14, 2011 7:22 AM
Subject: Can the United States feed China?

The Washington Post - March 13, 2011

<http://www.washingtonpost.com/wp-dyn/content/article/2011/03/11/AR2011031106993.html>

Can the United States feed China?

Lester R. Brown

Sunday, March 13, 2011; B03

Environmentalism explains why America will have to feed its rival

China is at war. It is not invading armies but expanding deserts that threaten its territory. As old deserts grow, as new ones form and as more and more irrigation wells go dry, Beijing is losing a long battle to feed its growing population on its own.

In the years to come, China will almost certainly have to turn to the outside world for grain to avoid politically destabilizing price spikes. Enter the United States - by far the world's largest grain exporter. The United States exports about 90 million tons of grain annually, though China requires 80 million tons of grain each year to meet just one-fifth of its needs.

Just as China is America's banker, America could become China's farmer. Such a scenario - to be dependent on imported grain, much of it from the United States - is China's worst nightmare and one that could create nightmares for U.S. consumers, as well.

The evidence of China's plight is clear. Since 1950, some 24,000 villages in the northwestern part of the country have been totally or partially abandoned as sand dunes encroach on cropland. And with millions of Chinese farmers drilling wells to expand their harvests, water tables are falling under much of the North China Plain, which produces half of the nation's wheat and a third of its corn.

Chinese agriculture is also losing irrigation water to cities and factories. Cropland is being sacrificed for residential and industrial construction, including highways and parking lots that accommodate China's voracious demand for automobiles. In 2009, automobile sales in China totaled just under 14 million, surpassing those in the United States for the first time. For every 1 million cars added to this fleet, at least 50,000 acres are paved over.

And China's food supply is already tightening. In November, its food price index was up 12 percent from 2009. The price of vegetables alone was up 62 percent.

In these conditions, how do you feed more than 1 billion people? This question vexes China's leaders, many of whom are survivors of the Great Famine, in which 30 million people starved to death between 1959 and 1961. Last year, in an effort to halt rising food prices, the government auctioned corn, wheat, rice and soybeans from state reserves. And in recent years, China has bought or leased land in other countries from Sudan to Indonesia to produce food and biofuels, but there is little to show in production from these

DM/b2

lands so far.

If China, which imported about 2 million tons of U.S. corn and wheat combined in 2010, charges into the U.S. grain market, American consumers will find themselves competing with nearly 1.4 billion foreign consumers for the U.S. grain harvest. This would raise the prices not only of products made directly from grain, such as bread, pasta and breakfast cereals, but also of meat, milk and eggs, which take large quantities of grain to produce. Corn futures have already hit \$7 a bushel, up from \$2 a bushel five years ago. In that same period, soybean futures climbed from \$6 a bushel to \$14 a bushel, and cattle and hog futures hit all-time highs.

China has been here before - with soybeans. In 1995, around the time the Communist Party prioritized grain production, China produced and consumed 14 million tons of soybeans. By 2010, China was still producing 14 million tons of soy annually, but consuming 69 million tons. For the nation that domesticated the soybean, the change was dramatic, and it resulted in the restructuring of agriculture in the Western Hemisphere. To meet overseas demand, the United States now has more land in soybeans than wheat. Brazil has more land in soybeans than in all grains combined. And Argentina is fast becoming a soybean monoculture. Today, nearly 60 percent of world soybean exports - almost all from these three countries - go to China.

Of course, when selling food to China, the United States is dealing with both an economic competitor and a creditor holding \$900 billion worth of U.S. Treasury securities. If China pushes U.S. food prices higher, tensions between the two countries may escalate. An even greater stress may develop between Washington and U.S. consumers, as Americans - who think cheap food is a birthright - are likely to press for restrictions on exports to China. There is precedent for this: In the 1970s, the United States banned exports of soybeans to countries such as Japan to quash domestic food price inflation.

Though withholding food from an emerging superpower could lower domestic food prices, it would be bad diplomacy. Even during the Cold War, the United States exported 10 million tons of wheat - nearly a quarter of the U.S. harvest - to the Soviet Union in 1972 after a crop failure there. Well-fed enemies are more predictable.

Would this work today? The Obama administration - or any future administration - faces a choice. If we limit grain sales to China, might the Chinese limit their monthly purchases at Treasury securities auctions? What would happen to farmers who can't sell to the world's largest food market? We can't know how this tension will play out politically, but we do know that our huge deficits of the past 30 years restrict our bargaining power.

The United States has been the world's breadbasket for more than half a century. Our country has never known food shortages or spiraling food prices. But, like it or not, we will probably have to share our harvest with the Chinese, no matter how much that raises our prices.

Our world is about to change. In the supermarket checkout line, in restaurants and at Federal Reserve meetings, it's hard to imagine that it will be for the better.

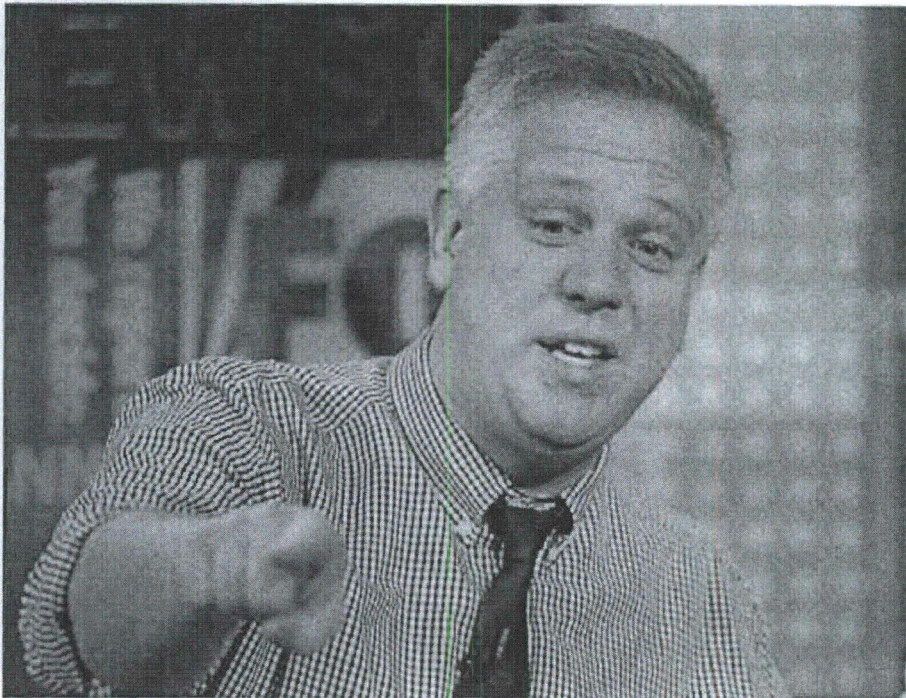
Lester R. Brown is president of the Earth Policy Institute and the author of "World on the Edge: How to Prevent Environmental and Economic Collapse."

ODriscoll, James

From: John M Fusco (b)(6)
Sent: Monday, March 14, 2011 8:59 PM
Subject: What a moron...

Glenn Beck: Japan earthquake could be 'message' from God to follow the Ten Commandments

BY MEENA HARTENSTEIN
DAILY NEWS STAFF WRITER
Monday, March 14th 2011, 6:17 PM



Drew/AP

Glenn Beck hinted on Monday that the earthquake in Japan is a 'message' of some kind.

- Hots for more U.S. nuclear plants cools
- Japanese prime minister calls disaster the biggest since World War II as rescue efforts continue
- China surpasses Japan as world's second biggest economy
- Japan hangs two convicted killers, sparking debate on death penalty
- Japanese PM warns of Greece-level 'collapse' under debt pile
- Outspoken populist elected as Japan's prime minister

Glenn Beck says Japan's earthquake might be a "message" from God.

"We can't see the connections here," he said on his show Monday. "I'm not saying God is causing earthquakes - well I'm *not* saying that either!" "What God does is God's business," Beck continued. "But I'll tell you this...there's a message being sent. And that is, 'Hey you know that stuff we're doing? Not really working out real well. Maybe we should stop doing some of it.' I'm just saying."

Beck continued trying to make a connection between human behavior and the natural disasters that have wreaked havoc in Japan, even casually mentioning "radical Islam" before revealing what he called "the answer."

DM/63

"The answer is, buckle up!" he said. "Because it's going to be a bumpy ride."

In light of the disasters that have devastated Japan, the Fox host stressed people should follow the biblical Ten Commandments, or what he referred to as "10 rules of thumb."

"What do you say we start doing those things?" he asked. "Because the things we are doing really suck. And they're not getting better."

Beck isn't the first right-wing pundit to imply that a natural disaster is punishment from God.

In April of 2010, Rush Limbaugh suggested President Obama's health care bill had launched the volcanic ash explosion that crippled Europe. "You know, a couple of days after the health care bill had been signed into law Obama ran around all over the country saying, 'Hey, you know, I'm looking around. The earth hadn't opened up. There's no Armageddon out there. The birds are still chirping,'" Limbaugh said on his show. "I think the earth has opened up. God may have replied."

"I wish to have no connection with any ship that does not sail fast,
for I intend to go in harm's way."

CAPT John Paul Jones, USN

16 Nov 1778

Sent from my iPad

ODriscoll, James

From: ODriscoll, James
Sent: Monday, March 14, 2011 3:17 PM
To: (b)(6)
Subject: RE: March 17 ECAT Exercise

(b)(6)

(b)(6)

DM/64

(b)(6)

• ODriscoll, James

From:

(b)(6)

Sent:

Monday, March 14, 2011 12:19 PM

To:

(b)(6)

Cc:

Subject:

Re: ECAT Admin and Scenario for March 17th Exercise

(b)(6)

(b)(6)

DM/65

ODriscoll, James

From: John M Fusco (b)(6)
Sent: Monday, March 14, 2011 10:52 PM
To: ODriscoll, James
Subject: Fwd: News Alert: Japan Faces Prospect of Nuclear Catastrophe as Employees Leave Plant

Bad news...

Begin forwarded message:

From: NYTimes.com News Alert <nytdirect@nytimes.com>
Date: March 14, 2011 22:13:02 EDT
To: (b)(6)
Subject: News Alert: Japan Faces Prospect of Nuclear Catastrophe as Employees Leave Plant
Reply-To: nytdirect@nytimes.com

Breaking News Alert
The New York Times
Mon, March 14, 2011 -- 10:11 PM ET

Japan Faces Prospect of Nuclear Catastrophe as Employees Leave Plant

Japan faced the likelihood of a catastrophic nuclear accident Tuesday morning, as an explosion at the most crippled of three reactors at the Fukushima Daichi Nuclear Power Station damaged its crucial steel containment structure, emergency workers were withdrawn from the plant, and much larger emissions of radioactive materials appeared imminent, according to official statements and industry executives informed about the developments.

Prime Minister Naoto Kan of Japan was preparing to make a televised address to the nation at 11 a.m. Tokyo time.

The sharp deterioration came after government officials said the containment structure of the No. 2 reactor, the most seriously damaged of three reactors at the Daichi plant, had suffered damage during an explosion shortly after 6 a.m. on Tuesday.

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<http://www.nytimes.com/2011/03/15/world/asia/15nuclear.html?emc=na>

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"I wish to have no connection with any ship that does not sail fast,
for I intend to go in harm's way."
CAPT John Paul Jones, USN
16 Nov 1778

Sent from my iPad

ODriscoll, James

From: ODriscoll, James
Sent: Monday, March 14, 2011 3:15 PM
To: (b)(6)
Subject: RE: Exercise update

(b)(6)

(b)(6)

DM/67

(b)(6)

(b)(6)

ODriscoll, James

From: Odriscoll, James G CDR NAF Washington (b)(6)
Sent: Tuesday, March 15, 2011 6:45 PM
To: ODriscoll, James
Subject: FW: Commander Odriscoll, resked paperwork

(b)(6)

(b)(6)

(b)(6)

Subject: Commander Odriscoll, resked paperwork

(b)(6)

DM/68

ODriscoll, James

From: John M Fusco (b)(6)
Sent: Tuesday, March 15, 2011 4:37 PM
Subject: India's Quiet Counter-China Strategy

The Diplomat - March 16, 2011

<http://the-diplomat.com/2011/03/16/india%e2%80%99s-quiet-counter-china-strategy-2/>

India's Quiet Counter-China Strategy

Security | South Asia | India March 16, 2011 By Nitin Gokhale

While publicly worrying over a Chinese 'String of Pearls' strategy, Indian military planners have been quietly boosting alliances in Asia.

The devastating earthquake and tsunami that struck north-eastern Japan last week may well delay a proposed naval exercise between India, the United States and Japan scheduled for early April. But irrespective of when it takes place, Exercise Malabar will see the Japanese Navy involved for the second year running in this joint India-US exercise.

At first glance, this may seem routine. But in the context of recent tensions in the Asia-Pacific region, as well as last year's intensifying rhetoric among countries with interests in the South China Sea, this annual exercise is assuming greater significance.

Exercise Malabar, originally envisaged as a bilateral US-India venture, had already assumed a higher profile in 2007 when Singapore, Japan and Australia joined the manoeuvres in the Bay of Bengal, prompting Beijing to issue demarches to all five participating countries. From China's point of view, the coming together of these five countries marked the beginning of a loose anti-China naval barrier in the Indian Ocean region.

Following China's protest, New Delhi and Washington refrained from inviting a third country for joint exercises held in 2008 and 2009. But last year, it quietly allowed Japan to participate in exercises off the coast of Okinawa. With Japanese participation failing to provoke a political storm, India decided it was happy for the Japanese Maritime Self-Defence Force to join in again this April.

According to the US Navy, the aim of the exercises is to 'strengthen the stability of the Pacific Region.' India, though, officially dismisses this sweeping rhetoric, arguing that the exercises are simply a learning opportunity for the Indian Navy. Sources say the emphasis of this latest 'learning exercise' for the Indian Navy will be on anti-submarine warfare, surface warfare, air defence, live-fire gunnery training, and visit, board, search and seizure (VBSS) operations.

So what is Japan's interest in taking part? For a start, while Japan's relations with Moscow and Beijing are erratic, India is seen as a stable and reliable long-term partner, a point underscored by Japan's recently released National Defence Programme Guidelines.

After touching on the United States and the Association of Southeast Asian Nations (ASEAN), which provide the traditional parameters of Japanese interests, the guidelines state that Japan must increase its

DM/69

cooperation with India and other countries that share the common interest of enhancing the security of maritime navigation from Africa to the Middle East to East Asia.

India, for its part, hopes to secure access to defence platforms and technologies that Japan has made a priority, such as maritime patrol, air defences, ballistic missile responses, transportation and command communications.

In keeping with the new focus, several high-level defence exchanges have taken place between India and Japan since the middle of 2010.

Air Chief Marshal P V Naik, chairman of India's Chiefs of Staff Committee and the country's most senior military officer, led an Indian delegation to Japan last September to participate in the first military-to-military talks between the two countries.

Naik's visit came just weeks ahead of a trip by Prime Minister Manmohan Singh to Tokyo in late October and was a follow-up to discussions in Japan in 2009 involving Indian Defence Minister A.K. Antony, in which the two sides expressed their commitment to contribute to bilateral and regional cooperation. Observers reading between the lines though, saw something else - an effort to build regional partnerships to counter the growing influence of China.

These high level visits aside, the Indian Navy has become increasingly active in the use of 'friendly' forays into the Pacific, including when a flotilla of Indian warships completed a month-long deployment to the Pacific that included visits to Australia, Indonesia, Singapore and Vietnam.

Indeed, these visits underscored the fact that India is quietly reaching beyond major regional powers to put in place a more robust military-to-military partnership with key nations in South-east Asia - in the past eight months alone, India's military leadership has made trips to Vietnam, the Philippines, Indonesia, Thailand and Singapore.

Last July, Indian Army chief General V K Singh was in Vietnam in the hopes of furthering an already strong strategic relationship. His visit was followed by Antony's mid-October trip to Hanoi, when he participated in the first-ever regional meeting of political leaders in the defence arena. In addition, as the current chair of ASEAN, Vietnam invited India to the ASEAN+8 defence ministers meeting.

There are two main reasons for India's courting of Vietnam. One is that both India and Vietnam have had experience bearing the brunt of Chinese aggression - India in 1962, and Vietnam in 1979. More recently, the collapse of the Soviet Union - long a security guarantor for both India and Vietnam in Asia - left New Delhi and Hanoi without their all-weather, all-powerful friend.

This shared experience, and the fact that they both have longstanding territorial disputes with China, has nudged them together to unite against their common adversary.

Located on the edge of South-east Asia, Vietnam is ideally placed to help counter China's expansion into the South China Sea. With this in mind, and for the past decade, India has been providing Vietnam with assistance in beefing up its naval and air capabilities in an attempt to deny China supremacy in the South China Sea.

But India also has an eye on bolstering ties in East Asia - and not just with Japan. Last September, Antony,

who is fast emerging as a quiet but effective player in India's military diplomacy, became the first-ever Indian defence minister to visit South Korea.

The visit was a follow-up on the declaration issued by both countries during South Korean President Lee Myung-bak's state visit to New Delhi in January 2010, when it was decided that the bilateral relationship would be upgraded to a 'strategic partnership.'

Although currently nowhere near the level of Indo-Vietnam defence cooperation, the newly evolving India - South Korea partnership is being seen as a vital component of India's efforts to counter China's increasing footprint in the subcontinent.

Indeed, Seoul is seen as a perfect counterbalance to the China - North Korea - Burma - Pakistan axis that New Delhi and the United States regard as a major irritant to Asia-Pacific stability.

These moves - some subtle, some less so - underscore the fact that while Indian strategic thinkers have been busy sounding frequent alarms over China's increasing forays into the Indian Ocean (and have often overstated fears of Beijing's 'String of Pearls' strategy in the process) New Delhi's defence establishment has been quietly putting in place India's own counter measures to China.

Whatever the consequences of this strategy, one thing is sure: The Indian Ocean and its periphery are poised to become the new playground for the 21st century version of the Great Game.

Nitin Gokhale is Defence & Strategic Affairs Editor with Indian broadcaster, NDTV 24x7

"I wish to have no connection with any ship that does not sail fast,
for I intend to go in harm's way."
CAPT John Paul Jones, USN
16 Nov 1778

Sent from my iPad

ODriscoll, James

From: John Fusco (b)(6)
Sent: Tuesday, March 15, 2011 1:43 PM
Subject: Weeping and Other Hysterics, Have Muslim Apologists Nothing More to Offer?

Weeping and Other Hysterics Have Muslim Apologists Nothing More to Offer?

by Raymond Ibrahim

Hudson New York

March 14, 2011

<http://www.meforum.org/2851/weeping-and-other-hysterics-have-muslim>

For starters, though it would have been unheard of generations ago and seen as a sign of instability, public crying is the latest rage for politicians. A 2007 Associated Press report puts it well: "Tears, once kryptonite to serious presidential candidates, today are more often seen as a useful part of the political tool kit"—and are thus indicative of an increasingly therapeutic society, one more interested in a show of catharsis than facts. From Congressman Keith Ellison's emotional breakdown to Congresswoman Jackie Speier's accusations of "racism," last week's hearings on Muslim radicalization have made it clear that those who oppose the hearings have little of substance to offer. Still, the tactics used by such apologists—namely, appeals to emotionalism and accusations of racism—are influential enough that they need to be addressed and discredited once and for all.

Yet, tears aside, if we wish to be objective for a moment, Ellison's testimony—culminating with his choking up and leaving the hearing—contributes nothing to the topic of Muslim radicalization in America. Instead, it raises more questions about Ellison—a former Nation of Islam leader, mouthpiece for the Muslim Brotherhood front-group CAIR, and critic of the U.S. Constitution.

Indeed, arguing that "suit-and-tie" Islamists have penetrated Western societies and are manipulating the legal system to their advantage—including by imposing aspects of Islamic law, winning special privileges for themselves, and, of course, shutting down criticism of Islam—Daniel Pipes has singled out Ellison as representing a far greater threat to Western civilization than Osama bin Laden.

Did Ellison feign an emotional breakdown during his opening remarks to leave the hearing and evade follow-up questions from Congressman Peter King and others—concrete questions about Muslim radicalization that he preferred not to respond to—or were his tears sincere? Either way, it is not clear which is worse: another obfuscating politician, or a politician whose emotions so dominate him that he cannot carry out his responsibilities.

While we are on the topic of strategic-weeping, it is relevant to note that authoritative Muslim scholars, such as Ibn Hajar, recommend deceiving infidels with crocodile tears: "Revealing one thing while secretly planning another is the essence of deception; moreover, the *hadith* incites [Muslims] to take great caution in war, while [publicly] lamenting and mourning in order to dupe the infidels" (The Al Qaeda Reader, p.142). This is not to conclude that Ellison is taking lessons from Hajar, but that even the most rabid jihadists—not just American politicians—are aware of the power of tears as a ruse.

The other tactic that frequently arises and is in dire need of being laid to rest—permanently—is this business of trying to stifle any talk on Islam and Muslims by labeling it "racist." One would have

DM/70

thought it was obvious, but apparently it needs stressing: race and religion have absolutely nothing to do with one another. Race is inherent, represented by physical characteristics; religion is learned, impacting the mind, regardless of race. Thus most major religions—especially Christianity and Islam—have adherents from all races and ethnicities.

Despite these obvious facts, uncritical thinkers like Congresswoman Jackie Speier—or simply garden-variety manipulators—constantly cry "racism" when Islam and Muslims come under scrutiny. This approach is ubiquitous: discussing the Fort Hood shootings, a former American soldier lamented that "When a white guy shoots up a post office, they call that going postal. But when a Muslim [namely, Nidal Hasan] does it, they call it jihad." Notice the confusion; as if a "white guy" and a "Muslim" represent different races. (What if the person is a "white Muslim," as in the instance of Hasan?)

Of course, if a person of any color goes on a random shooting spree, it would be racist to pin it on his race. But if a person of any color goes on a shooting spree—while waving the Koran, screaming Allahu Akbar, or otherwise rationalizing his actions in Islamic terms, as did Nidal Hasan—then we are talking about a shooting spree motivated by a learned ideology or worldview that has nothing to do with the shooter's race.

And this is the whole point: tears and moral outrage aside, while it is important to recognize that not all Muslims are jihadists, it is equally important to acknowledge that all jihadists are Muslims—hence the need to delimit the hearings to the Muslim community. You will not find jihadists ensconced among neo-Nazis or other "radicals." Moreover, as Peter King put it:

There is no equivalency of threat between al-Qaeda and neo-Nazis, environmental extremists or other isolated madmen. Only al-Qaeda and its Islamist affiliates in this country are part of an international threat to our nation. Indeed, by the Justice Department's own record, not one terror-related case in the last two years involved neo-Nazis, environmental extremists, militias or anti-war groups.

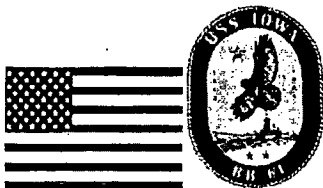
Based on these initial hearings, it is clear that the apologists have little to offer. As Jennifer Rubin writes at the Washington Post, "The Democrats' unhinged rhetoric and wild accusations did more to undermine their opposition to the hearings than anything King could possibly have said." Yet crying tears or "racism!" is emblematic of a greater problem: politicians trying to appeal to the people's emotions, not their reason—an approach that has historically had horrific consequences.

Raymond Ibrahim is associate director of the Middle East Forum.

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*"I wish to have no connection with any ship that does not sail fast,
for I intend to go in harm's way."*

CAPT John Paul Jones, USN

16 Nov 1778



ODriscoll, James

From: John Fusco (b)(6)
Sent: Tuesday, March 15, 2011 1:35 PM
Subject: Playing dead: The sickening video that shows children recreating suicide bomber attacks as a playground game

Whatever happened to hide-and-seek and tag?

Playing dead: The sickening video that shows children recreating suicide bomber attacks as a playground game

By DAILY MAIL REPORTER

Last updated at 3:13 PM on 1st March 2011

Comments (87)

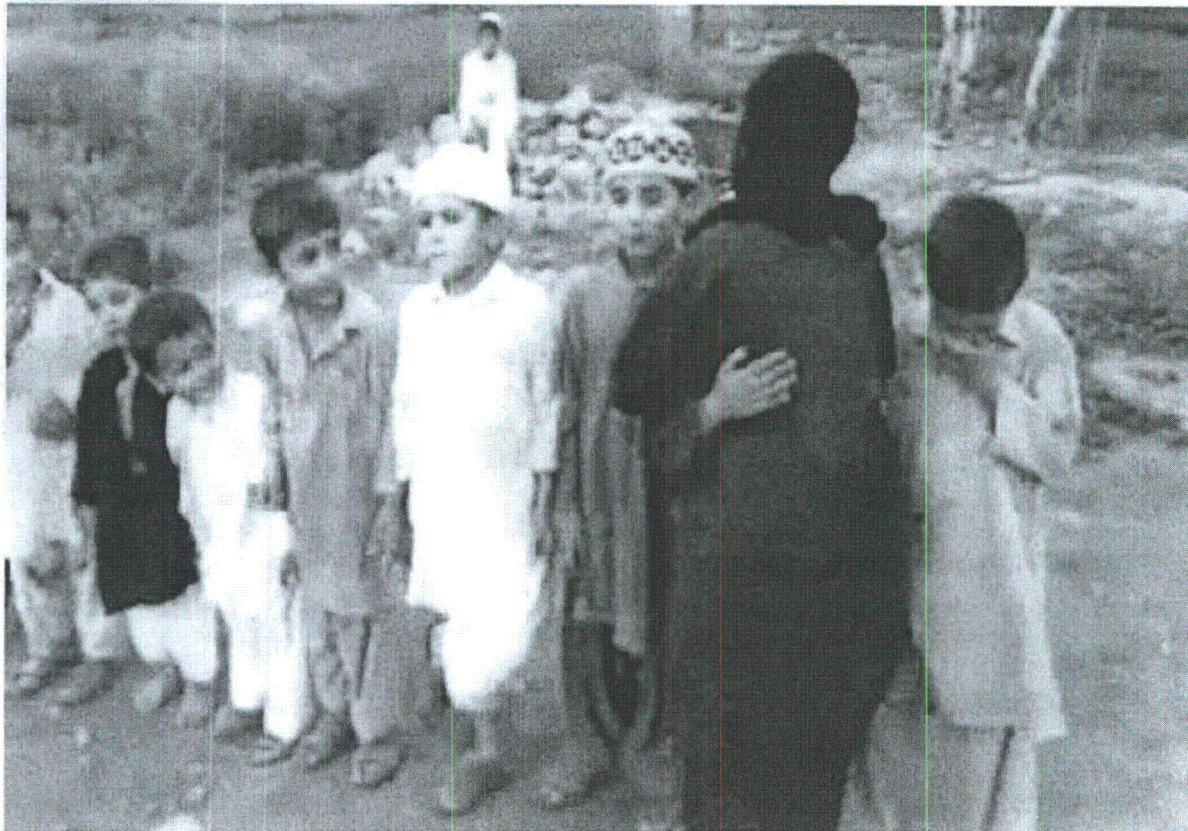
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A shocking video has emerged from Pakistan depicting children role-playing a Taliban suicide bombing.

The 84-second clip shows Pashtun children recreating a terrorist attack, with one boy dressed in black - the 'bomber' - being embraced and wished well by his friends before setting off on his deadly mission.

In the single-take video, the 'bomber' then approaches another boy, dressed in white, who appears to be mimicking a member of the security forces and tries to stop him.

See the video below...



Saying goodbye: The bomber, dressed in black, embraces his friends before setting off on his mission

DM/71



Halt: The bomber is stopped by a boy pretending to be with the security forces



Boom: The boys throws sand and dust into the air to simulate the explosion

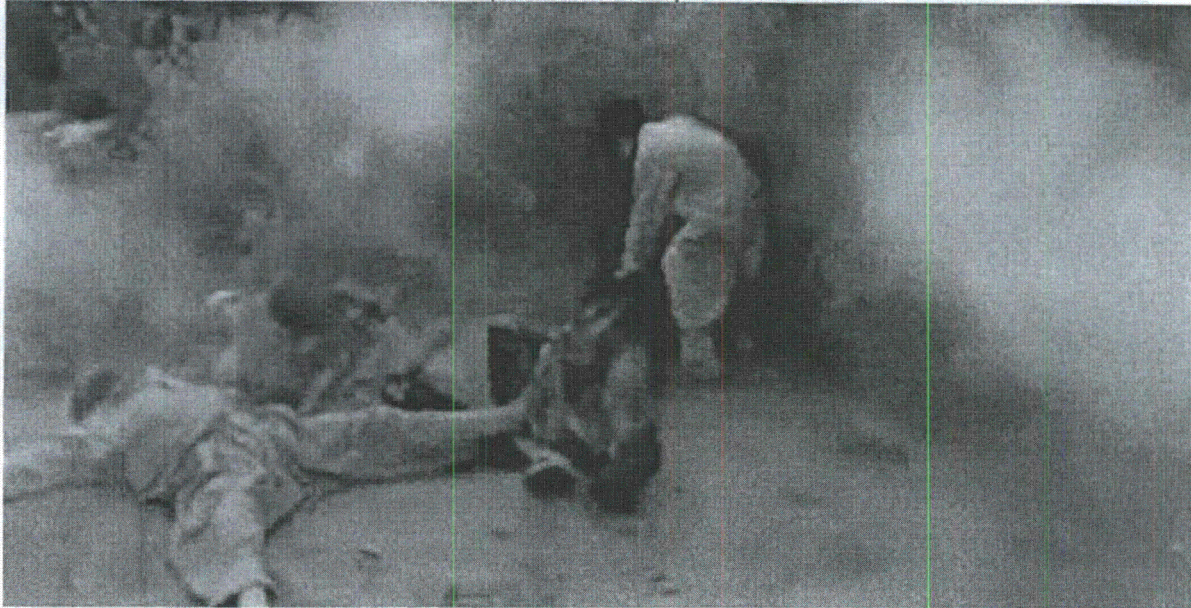
But the young Jihadi then 'detonates' - with other boys throwing sand into the air to simulate the explosion - and others rush in to examine the children who are playing dead.

Ahsan Masood, a Pashtun from Waziristan in Pakistan, posted the video on Facebook because he 'thought it was funny'. He said he believed it had been filmed in Khost, Afghanistan, and that it had been sent to him via his mobile phone by a friend.

It has been described as 'horrifying' by a children's charity in Pakistan, but others have said it could be seen in a positive light as children role-play to deal with the violent circumstances they see in their everyday lives.



Sophisticated: The 'special effect' and the video has been praised for its creativity



Medical help? One child runs in to examine the 'dead' after the explosion



Playing dead: The victims all do their best to keep still

Salma Jafar of Save the Children UK in Pakistan, told The Guardian: 'It's horrifying and alarming.

'These children have become fascinated by bombers rather than condemning them.

'If they glamorise violence now, they can become part of it later in life.'

However, Pakistani media commentator Fasi Zaka called clip 'the most amazing amateur video I've ever seen'.

'It's disturbing but also sophisticated and creative – a one-camera shot that captures it all. They are reproducing what they see in their lives around them.'

Explore more:

Places:

Pakistan,
Afghanistan

Read more: <http://www.dailymail.co.uk/news/article-1361725/Video-children-playing-suicide-bomb-game-circulates-Pakistan.html#ixzz1GgshIQUB>

*"I wish to have no connection with any ship that does not sail fast,
for I intend to go in harm's way."*

CAPT John Paul Jones, USN

16 Nov 1778



ODriscoll, James

From: John M Fusco (b)(6)
Sent: Tuesday, March 15, 2011 8:16 AM
Subject: Military 'diversity': more DC silliness

Military 'diversity': more DC silliness

Last Updated: 5:16 AM, March 14, 2011

Posted: 11:12 PM, March 13, 2011

Comments: 20

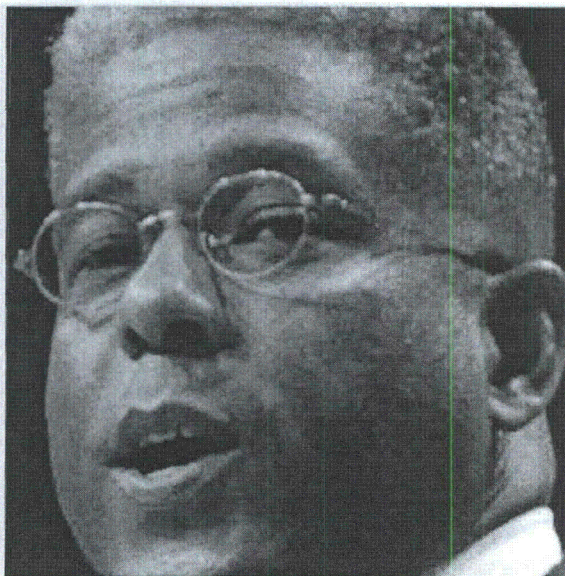
More  Print



Michael A. Walsh

Just when you think that our government can't get any sillier, along comes something like the Military Leadership Diversity Commission -- and let's face it, up to now you didn't even realize such a thing existed -- to crush your hopes that any sensible people are left in Washington, DC.

The diversity commission last week issued its completely awaited report to call for, you guessed it, more diversity among military leadership. Not great fighting effectiveness, which should always be job No. 1. Not smarter leadership. Not braver fighting generals and fewer rear-echelon paper-pushers.



West: Lt. col. calls report "slap in the face."

REUTERS

No, what this country really needs from the Pentagon is better diversity management, including a chief diversity officer reporting directly to the defense secretary.

It seems the problem is -- wait for it -- that the officer corps has too many white males. This, of course, will come as a shock to George Washington, U.S. Grant, Black Jack Pershing, George Patton and Dwight D. Eisenhower, who somehow managed to struggle through to victory without the accumulated wisdom of the Military Leadership Diversity Commission, created by the Pelosi-Reid Congress in 2009.

"The commission believes that the diversity of our service members is the unique strength of our military," writes the chairman, Lester Lyles, to President Obama, in a cover letter for the report. "Current and future challenges can be better met by broadening our understanding of diversity."

DM/72

Hold it right there.

"The unique strength of our military"? Only in the wonderful world of government PC-speak and corporate sensitivity training is this fantasy not laughed out of the regiment. Our all-volunteer military has many strengths -- superior weaponry, better tactics, more education and, since 2001, matchless battlefield and combat experience -- but "diversity" shouldn't rank high among them. Instead, it's a welcome by-product of recruitment, talent, brains, courage and drive -- the things that make American forces the best in the world.

In fact, unless the goal of your outfit is nose counting, "diversity" is basically meaningless. The overriding measure for any organization ought to be its effectiveness at getting the job done -- and that goes double for an institution designed first and foremost to kill people and blow things up in the defense of freedom, liberty and the USA.

In any case, since President Harry Truman integrated the armed forces in 1948 with Executive Order 9811, the US military has been a leader, not a follower when it comes to "inclusion." In no other area of American life have first the races (and now the sexes) been treated so fairly or performed together more effectively -- something that even the diversity commission has to admit:

"The commission acknowledges that the services have been leaders in providing opportunities for all service members, regardless of their racial/ethnic background or gender."

But of course that's not good enough for the nose-counters -- not when 77 percent of active-duty senior officers are white, 8 percent black, 5 percent Hispanic and 16 percent are women.

"The Armed Forces have not yet succeeded in developing a continuing stream of leaders who are as demographically diverse as the nation they serve."

Yet, according to the 2010 census, whites account for nearly 75 percent of the population, and blacks 12.4 percent, while Latinos can fall into either category. The "problem" seems minor.

Among other things, the commission recommends that since combat is often a ticket to promotion, we need women in combat units, where they can have the same opportunity as a man either to be promoted -- or be killed.

But combat effectiveness is not what this report is all about. Instead, it gives the game away right at the beginning: Its first injunction is that we must "Define Diversity for a New Era." Everything that comes after is seen through this myopic, PC prism.

Fortunately, at least one man in Washington knows how to spell bunkum: Lt. Col. Allen West, now a congressman from Florida, who called the report a "slap in the face" to those minorities who have forged successful careers in the services without the help of diversity commissions.

The outspoken colonel, whose political career is poised for takeoff, is absolutely right. The president and the Pentagon should thank the commission for its work, put the report in the trash and get on with the dirty business of fighting -- and winning -- the nation's diverse wars.

Michael Walsh, a former associate editor of Time, is the author (writing as "David Kahane") of "Rules for Radical Conservatives."

"I wish to have no connection with any ship that does not sail fast,
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CAPT John Paul Jones, USN

16 Nov 1778

Sent from my iPad

ODriscoll, James

From: John M Fusco (b)(6)
Sent: Tuesday, March 15, 2011 8:09 AM
Subject: Navy reservist faces court-martial in espionage case

Navy reservist faces court-martial in espionage case

Posted to: Crime Military Norfolk



Petty Officer 2nd Class Bryan Minkyu Martin will face a general court martial.



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By Corinne Reilly
The Virginian-Pilot
© March 15, 2011

NORFOLK

DM/73

A Navy reservist accused of trying to sell classified documents will face a general court-martial at Norfolk Naval Station, the service said Monday.

Petty Officer 2nd Class Bryan Minkyu Martin, 22, of New York has been charged with four counts of attempted espionage and 11 counts of mishandling classified information.

A date for the court-martial has not been set. Martin is in custody at the base's brig.

An intelligence specialist, he was arrested Dec. 1 in North Carolina. At the time he was at Fort Bragg training to deploy to Afghanistan, though he was assigned to the Expeditionary Combat Readiness Center at Joint Expeditionary Base Little Creek-Fort Story in Virginia Beach.

Over the course of three meetings shortly before his arrest, Martin accepted a total of \$3,500 from an undercover FBI agent in exchange for dozens of pages of documents that were classified either as secret or top secret, according to a warrant.

According to charging documents, Martin had reason to believe that the information "would be used to the injury of the United States or to the advantage of a foreign nation."

Authorities have said no classified information actually was delivered to anyone not authorized to see it.

Martin is being represented by two military lawyers, Lt. Cmdr. Ryan Stormer and Lt. Paul Threatt. A spokeswoman for the Navy's mid-Atlantic region, Beth Baker, said neither had any comment.

Martin enlisted in the Navy in 2006 and received a top-secret-level security clearance the following year. Before reporting to Fort Bragg in September, he was stationed at military facilities in Syracuse, N.Y.; Jackson, S.C.; San Diego and Washington.

The Associated Press contributed to this report.

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CAPT John Paul Jones, USN
16 Nov 1778

Sent from my iPad

ODriscoll, James

From: John M Fusco (b)(6) EX 6
Sent: Tuesday, March 15, 2011 8:03 AM
Subject: Poll: Nearly two-thirds of Americans say Afghan war isn't worth fighting

Poll: Nearly two-thirds of Americans say Afghan war isn't worth fighting



Gallery: Afghan National Army recruits walk back to their formation after completing marksmanship training during Basic Warrior Training at the Kabul Military Training Center in Kabul, Afghanistan. U.S. Vice President Joe Biden stated that, as long as the they were welcome, US troops could stay in Afghanistan until after 2014.

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By Scott Wilson and Jon Cohen, Tuesday, March 15, 12:20 AM

Nearly two-thirds of Americans now say the war in Afghanistan is no longer worth fighting, the highest proportion yet opposed to the conflict, according to a new Washington Post-ABC News poll.

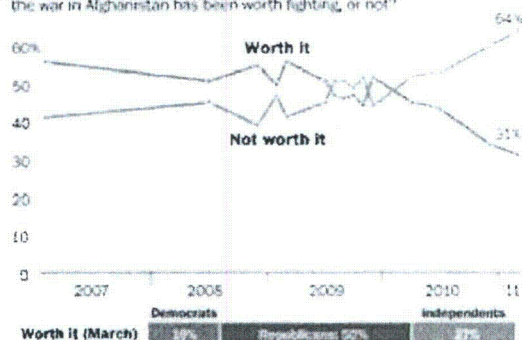
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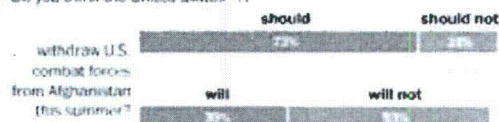
- Weigh In
- Corrections?

Graphic

Q: Considering the costs vs. the benefits to the United States, do you think the war in Afghanistan has been worth fighting, or not?



Q: Do you think the United States ...



Source: The Washington Post-ABC News poll, conducted Oct. 1-10, 2011, among a national random sample of 1,000 adults. The poll has a margin of error of plus or minus 3.5 percentage points. The poll was conducted by the Washington Post-ABC News Polling Center. The poll was conducted by the Washington Post-ABC News Polling Center. The poll was conducted by the Washington Post-ABC News Polling Center.

The Washington Post - ABC News poll

Graphic: Nearly three-quarters of the public thinks a substantial number of U.S. forces should be withdrawn from Afghanistan this summer. But fewer than four in 10 think it will happen.

More On This Story

- Poll: Budget impasse cements public's disapproval of Washington
- Poll: Nearly two-thirds of Americans say Afghan war isn't worth fighting

The finding signals a growing challenge for President Obama as he decides how quickly to pull U.S. forces from the country beginning this summer. After nearly a decade of conflict, political opposition to the battle breaks sharply along partisan lines, with only 19 percent of Democratic respondents and half of Republicans surveyed saying the war continues to be worth fighting.

Nearly three-quarters of Americans say Obama should withdraw a "substantial number" of combat troops from Afghanistan this summer, the deadline he set to begin pulling out some forces. Only 39 percent of respondents, however, say they expect him to withdraw large numbers.

- The Post-ABC News poll results come as Gen. David H. Petraeus, the U.S. commander in Afghanistan, prepares to testify before Congress on Tuesday about the course of the war. He is expected to face tough questioning about a conflict that is increasingly unpopular among a broad cross section of Americans.

Petraeus will tell Congress that "things are progressing very well," Pentagon spokesman Geoff Morrell said Monday. But because of battlefield gains made by U.S. and coalition forces since last year, Morrell told MSNBC, "it's going to be heavy and intensive in terms of fighting" once the winter cold passes.

The poll began asking only in 2007 whether the Afghan war is worth fighting, but support has almost certainly never been as low as it is in the most recent survey.

The growing opposition presents Obama with a difficult political challenge ahead of his 2012 reelection effort, especially in his pursuit of independent voters.

Since Democrats took a beating in last year's midterm elections, Obama has appealed to independents with a middle-of-the-road approach to George W. Bush-era tax cuts and budget negotiations with Republican leaders on Capitol Hill. He called a news conference last week to express concern about rising gasoline prices, an economically pressing issue for many independent voters.

But his approach to the Afghan war has not won over the independents or liberal Democrats who propelled his campaign two years ago, and the most recent Post-ABC News poll reinforces the importance of Republicans as the chief constituency supporting his strategy. The results suggest that the war will be an awkward issue for the president as he looks for ways to end it. Nearly 1,500 U.S. troops have died since the fighting began in 2001.

During his 2008 campaign, Obama promised to withdraw American forces from the Iraq war, which he opposed, and devote more resources to the flagging effort in Afghanistan, which he has called an essential front in combating Islamist terrorism targeting the United States.

After a months-long strategy review in the fall of 2009, he announced the deployment of an additional 30,000 U.S. troops to Afghanistan — taking the total to more than 100,000 — and a July 2011 deadline for the start of their withdrawal.

The number of respondents to the Post-ABC News poll who say the war is not worth fighting has risen from 44 percent in late 2009 to 64 percent in the survey conducted last week.

Two-thirds of independents hold that position, according to the poll, and nearly 80 percent said Obama should withdraw a "substantial number" of troops from Afghanistan this summer. Barely more than a quarter of independents say the war is worth its costs, and for the first time a majority feel "strongly" that it is not.

Obama, who met with Petraeus on Monday at the White House, has said he will determine the pace of the withdrawal by assessing conditions on the ground.

At the same time, U.S. and NATO forces have come under sharp criticism from the Afghan government. Over the weekend, after a NATO bombing killed nine children, Afghan President Hamid Karzai demanded that international troops "stop their operations in our land," a more pointed call than previous ones he has made following such deadly NATO mistakes.

The telephone poll was conducted March 10 to 13 among a random national sample of 1,005 adults. Results from the full poll have a margin of sampling error of plus or minus 3.5 percentage points.

The survey also asked respondents to assess Obama's performance in managing the political changes sweeping across the Middle East and North Africa. Overall, 45 percent of respondents approve of his handling of the situation, and 44 percent disapprove.

In Libya, where Moammar Gaddafi is battling a rebel force seeking to end his 41-year rule, Obama is under increasing pressure to implement a no-fly zone over the country to prevent the Libyan leader from taking back lost territory and to protect civilians from government reprisals.

Nearly six in 10 Americans say they would support U.S. participation in a no-fly zone over Libya, the poll found, despite recent warnings from Defense Secretary Robert M. Gates that doing so would be a "major operation."

But the survey found that American support dips under 50 percent when it comes to unilateral U.S. action, as Democrats and independents peel away.

When told that such a mission would entail U.S. warplanes bombing Libyan anti-aircraft positions and "continuous patrols," about a quarter of those initially advocating U.S. participation turn into opponents.

After a meeting Monday with Danish Prime Minister Lars Loekke Rasmussen, Obama said, "We will be continuing to coordinate closely both through NATO as well as the United Nations and other international fora to look at every single option that's available to us in bringing about a better outcome for the Libyan people."

In general, Americans do not think that the changes in the Middle East and North Africa will prove beneficial to U.S. economic and security interests.

More than seven in 10 respondents said demonstrators are interested in building new governments, although not necessarily democratic ones. Almost half of those surveyed view the turmoil as undermining the United States' ability to fight terrorist groups in the region.

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Staff writer Karen DeYoung contributed to this report.

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ODriscoll, James

From: John M Fusco (b)(6)
Sent: Tuesday, March 15, 2011 7:36 AM
Subject: Joel Kotkin: Why North Dakota Is Booming - The Wall Street Journal.

Time to go West young man...

I thought you would be interested in the following story from The Wall Street Journal.

Joel Kotkin: Why North Dakota Is Booming

<http://online.wsj.com/article/SB10001424052748704893604576198881896338372.html>

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"I wish to have no connection with any ship that does not sail fast,
for I intend to go in harm's way."

CAPT John Paul Jones, USN
16 Nov 1778

Sent from my iPad

DM/75

ODriscoll, James

From: John M Fusco (b)(6)
Sent: Tuesday, March 15, 2011 6:56 AM
To: ODriscoll, James
Subject: Fwd: TerraDaily - Japan Nuclear Disaster Update: March 15, 2011

Just reading the stories below, this is a real setback for the nuke industry around the world. Everybody is overreacting. What's the scuttlebutt down there? Obviously you guys are all over this.

Begin forwarded message:

From: "Nuclear Power Express: Technology and Application" <energy-daily@energy-daily.com>
Date: March 14, 2011 22:41:17 EDT
To: (b)(6)
Subject: TerraDaily - Japan Nuclear Disaster Update: March 15, 2011
Reply-To: energy-daily@energy-daily.com

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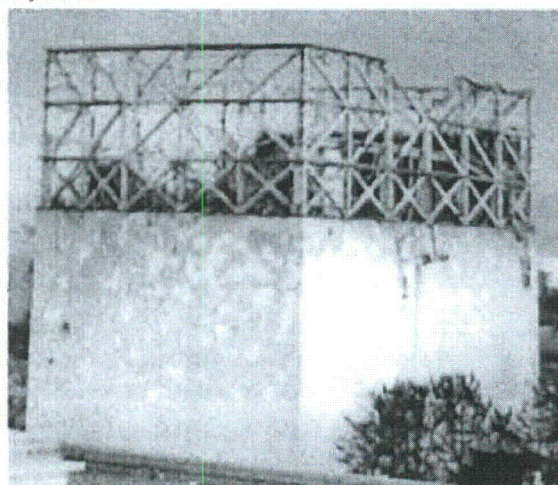
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March 15, 2011

CIVIL NUCLEAR Plant operator says reactor seal apparently not holed

Tokyo (AFP) March 15, 2011 - The seal around a reactor at a quake-damaged Japanese nuclear power plant does not appear to have been holed, the plant operator said Tuesday, following an explosion at the plant. Chief Cabinet Secretary Yukio Edano told reporters earlier that the suppression pool of the number-two reactor at the Fukushima



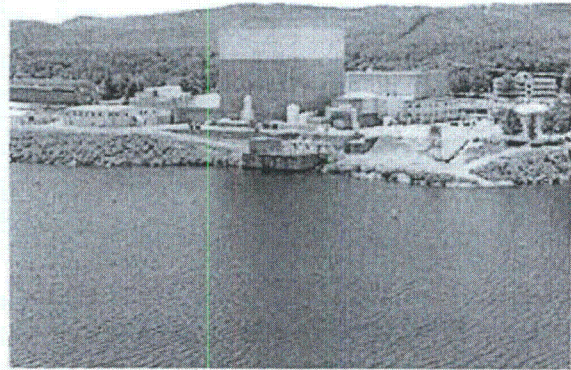
DM/76

No.1 plant appeared to have been damaged. The pool forms the base of the containe ... [more](#)

CIVIL NUCLEAR

US ill-prepared for emergency radiation: study

Washington (AFP) March 14, 2011 - Most American states are not prepared to cope with a major nuclear radiation event, said a study published Monday that happened to coincide with a feared nuclear disaster in quake-hit Japan. The survey of state health departments was conducted in 2010 and found that almost half of the 38 states that took part had no plan for protecting public health in the event of a radiation emergency. ... [more](#)



CIVIL NUCLEAR

Japan scrambles as reactor container 'damaged'

Sendai, Japan (AFP) March 15, 2011 - The container around an overheating nuclear reactor appears to be damaged, Japan's government said Tuesday, raising the chance that dangerous radiation could leak from the quake-hit plant. The announcement came as engineers scrambled to keep the temperature of three reactors under control after they were hit by the tsunami that swept Japan following Friday's massive earthquake. Rescue te ... [more](#)



CIVIL NUCLEAR

Germany suspends nuclear extension

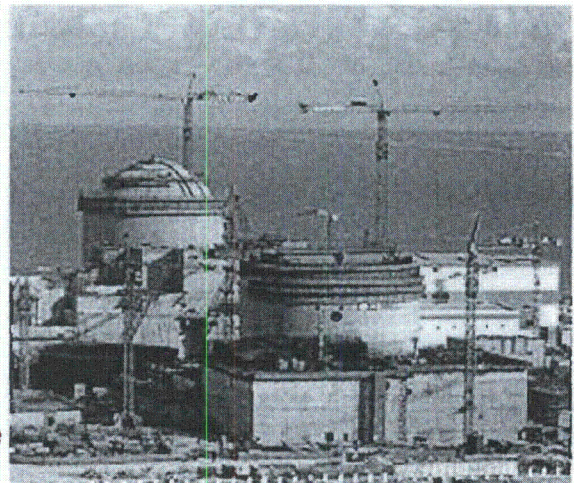
Berlin (UPI) Mar 14, 2011 - German Chancellor Angela Merkel has shelved for three months a decision to extend nuclear power in the country following the Japanese nuclear crisis, which has reopened the debate on the energy source in Europe. "The events in Japan ... teach us that events deemed absolutely unlikely can happen," Merkel said Monday in Berlin. "We have a new situation and this has to be analyzed very tho ... [more](#)



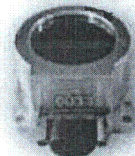
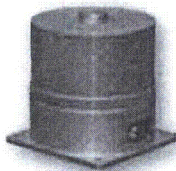
CIVIL NUCLEAR

Japan quake setback to global nuclear industry

Washington (AFP) March 14, 2011 - The meltdown and radiation fears at Japan's nuclear power plants following a massive earthquake put nuclear power supporters on the defensive Monday just as the industry was enjoying a renaissance. Opponents raised new doubts about the safety of nuclear plants advertised as "clean" energy, and investors dumped the shares of companies that manufacture or operate nuclear plants. Supporters ... [more](#)



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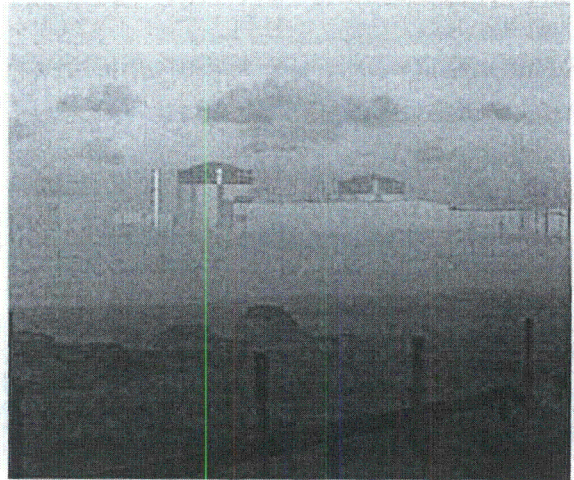


Small sub-systems, small prices

CIVIL NUCLEAR

Anxious Europe examines nuclear safety after Japan quake

Brussels (AFP) March 14, 2011 - Japan's nuclear emergency Monday prompted Germany and Switzerland to halt nuclear programmes as anxious Europe scrambled to review cross-border safety while safeguarding the powerful industry. With some 150 reactors scattered across the continent in half as many nuclear power plants - some located in seismic areas - the European Union convened emergency talks Tuesday of energy ministers, n ... [more](#)



CIVIL NUCLEAR

US West Coast: on frontline from nuclear cloud?

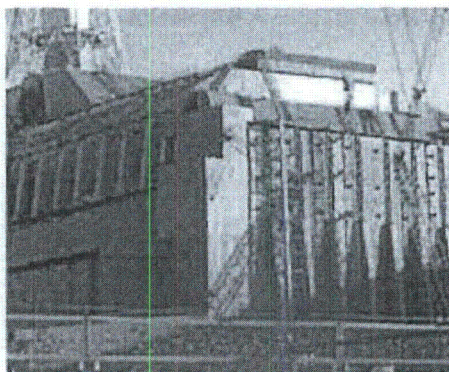
Los Angeles (AFP) March 14, 2011 - California is closely watching the crisis at a Japanese nuclear plant, but officials downplayed the threat that a radioactive cloud blown across the Pacific could pose for the US West Coast. While radioactivity could reach the United States from the quake-hit Fukushima plant, the levels would not be high enough to cause major health problems, said the Nuclear Regulatory Commission (NRC). ... [more](#)



CIVIL NUCLEAR

Fukushima 'unlikely' to be new Chernobyl: IAEA

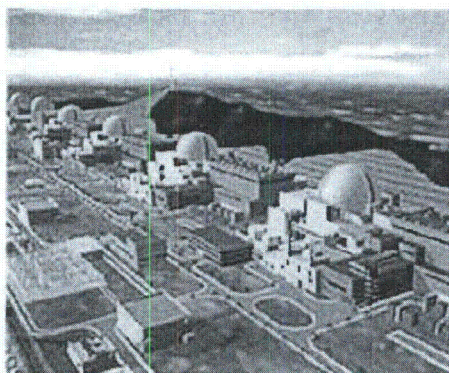
Vienna (AFP) March 14, 2011 - The crisis at Japan's earthquake-damaged nuclear power plant is "unlikely" to turn into a new Chernobyl, which was the world's worst nuclear accident, the UN atomic watchdog said on Monday. "Let me say that the possibility that the development of this accident into one like Chernobyl is very unlikely," Yukiya Amano told a news conference at the headquarters of the International Atomic Energy ... [more](#)



CIVIL NUCLEAR

S. Korea boasts of safety of home-built nuke plants

Seoul (AFP) March 14, 2011 - President Lee Myung-Bak boasted Monday of the safety of South Korean-built nuclear reactors as explosions at an earthquake-hit atomic plant in Japan raised fears of a nuclear disaster. The South Korean leader attended a groundbreaking ceremony for the construction of nuclear power plants during his trip to the United Arab Emirates and said the country would have "top-class" plants. A Sou ... [more](#)



CIVIL NUCLEAR

Areva drops 9% on market amid Japan nuclear fears

Paris (AFP) March 14, 2011 - French nuclear group Areva dropped 9.5 percent Monday as European stock markets reacted to growing fears over nuclear power owing to problems with reactors in quake-hit Japan. Shortly after trading began Areva's non-voting shares were down 9.5 percent as the market overall shed 0.5 percent. The public group is at the heart of a running debate in France over nuclear power's role in a worl ... [more](#)



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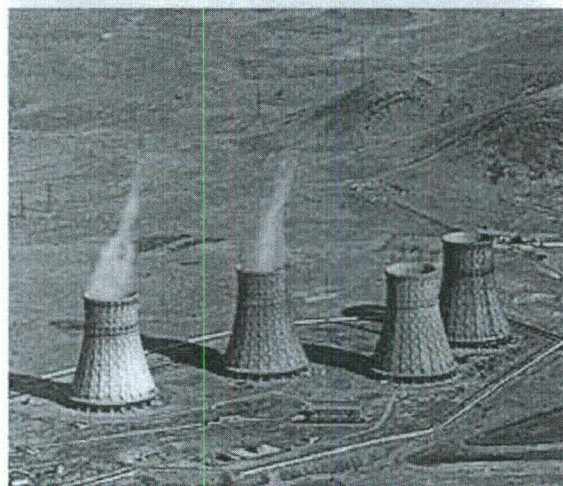
12-17 June, 2011 - Okinawa, Japan

CIVIL NUCLEAR

Nuclear contamination: The options

Paris (AFP) March 13, 2011 - Evacuation, temporary shelter and iodine pills are the chief weapons for protecting civilians against nuclear fallout, experts say. A blast on Saturday that wrecked the concrete shell surrounding the No. 1 reactor at Japan's Fukushima nuclear plant released radioactive vapour but not at levels dangerous for human health, according to Japanese officials.

Specialists say the authorities ha ... [more](#)



ENERGY DAILY

Quake-hit Japan delays planned power cuts

Tokyo (AFP) March 14, 2011 - Japan on Monday delayed planned power cuts, an unprecedented measure that came after the devastating earthquake and tsunami which crippled nuclear power plants in the northeast. Tokyo Electric Power (TEPCO) had originally planned to begin the cuts at 6:20 am (2120 GMT), but has decided to delay them at least until around 10:00 am, Jiji Press and national broadcaster NHK said. Prime Minis ... [more](#)



CIVIL NUCLEAR

Japan nuke plant rocked by second blast

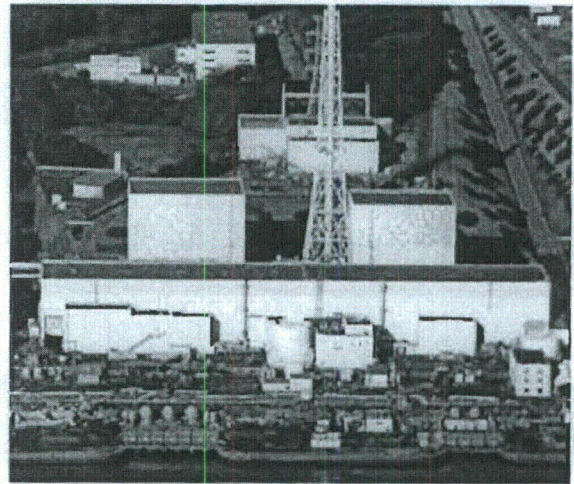
Sendai, Japan (AFP) March 14, 2011 - An explosion rocked an earthquake-hit nuclear plant Monday, as Japan struggled to avert a catastrophic reactor meltdown caused by a quake and tsunami feared to have killed more than 10,000. A new tsunami scare triggered evacuations on the devastated northeast coast after a large wave was spotted rolling in to shore, but authorities said they had detected no sign of a tsunami or a quake that ... [more](#)



CIVIL NUCLEAR

Japan battles nuclear emergency after deadly quake

Fukushima, Japan (AFP) March 14, 2011 - Japan raced to avert a meltdown of two reactors at a quake-hit nuclear plant Monday as the death toll from the disaster on the ravaged northeast coast was forecast to exceed 10,000. An explosion at the ageing Fukushima No. 1 atomic plant blew apart the building housing one of its reactors Saturday, a day after the biggest quake ever recorded in Japan unleashed a monster tsunami. The atom ... [more](#)



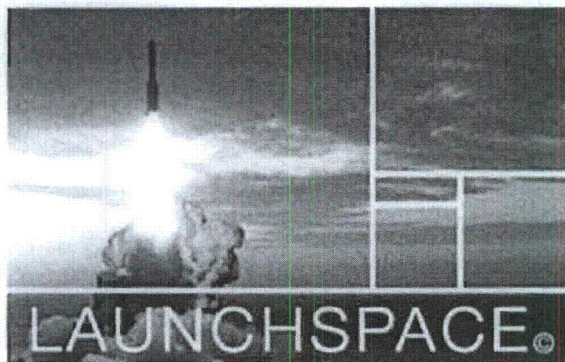
CIVIL NUCLEAR

Japan quake threatens setback for nuclear energy

Hong Kong (AFP) March 13, 2011 - Explosion and meltdown fears at Japan's quake-hit Fukushima nuclear plant renewed debate about the safety of atomic energy Sunday and cast doubt over its future as a clean energy source. Officials warned that there was a "high possibility" of meltdown at the ageing facility north of Tokyo, which was rocked by an explosion



Saturday following an 8.9-strength tremor that sent 10-metre waves bul ... [more](#)



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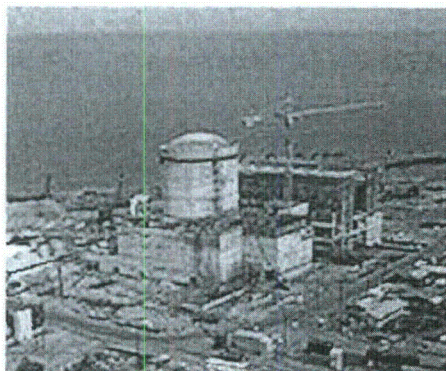
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CIVIL NUCLEAR

**Philippine nuclear
proponent reverses stand**

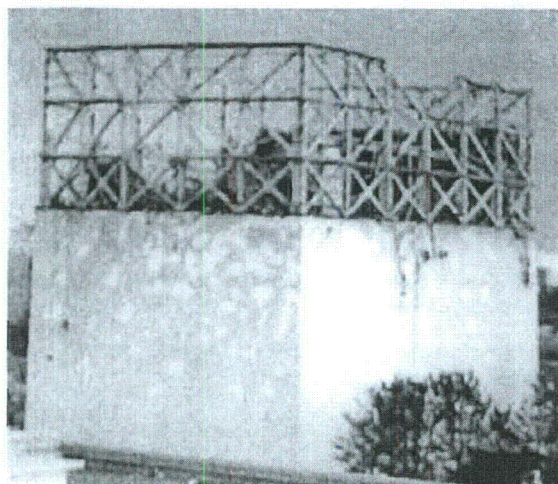
Manila (AFP) March 14, 2011 - The leading proponent of introducing nuclear energy to the Philippines reversed his stand Monday in the wake of a potential nuclear disaster in quake-hit Japan. Mark Cojuangco, a cousin of President Benigno Aquino, said there was a need to rethink assumptions that nuclear power was safe following two explosions in three days at Japan's Fukushima plant. "In the light of Fukushima, I would ... [more](#)



CIVIL NUCLEAR

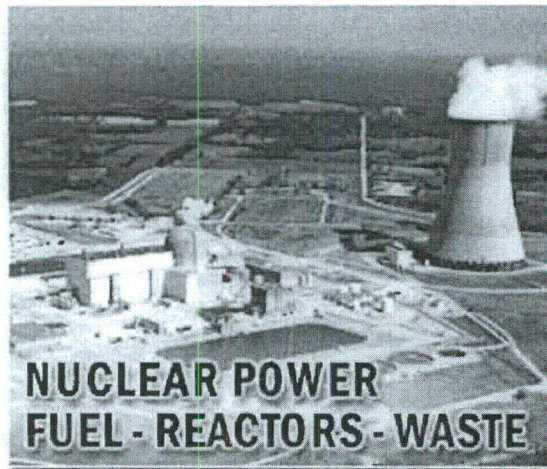
**Meltdowns may have
occurred in two reactors:
Japan govt**

Tokyo (AFP) March 13, 2011 - Japan's top government spokesman Yukio Edano said Sunday that radioactive meltdowns may have occurred in two reactors of the quake-hit Fukushima nuclear plant. Asked in a press conference whether meltdowns had occurred, Edano said "we are acting on the assumption that there is a high possibility that one has occurred" in the plant's number-one reactor. "As for the number-three reactor, w ... [more](#)



CIVIL NUCLEAR**Japan PM under fire over slow response to nuke accident**

Tokyo (AFP) March 13, 2011 - Japan's Prime Minister Naoto Kan was facing media criticism on Sunday over his government's response to an explosion at a quake-hit nuclear reactor that had triggered fears of a meltdown. "The way the government provided information is questionable," the Yomiuri Shimbun said in an editorial. An explosion blew off the roof and walls of the structure around the reactor at Fukushima No. 1 a ... [more](#)



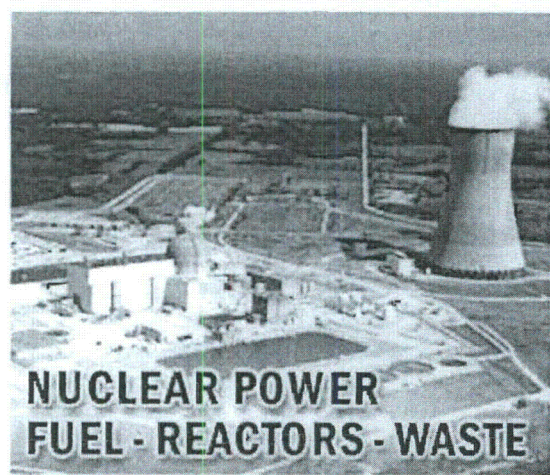
CIVIL NUCLEAR**Blast at Japan nuke plant; '1,000 dead' after quake**

Minamisoma, Japan (AFP) March 12, 2011 - An explosion and feared meltdown at one of Japan's nuclear plants Saturday exposed the scale of the disaster facing the country after a massive quake and tsunami left 1,000 feared dead. Reactor cooling systems failed at two plants after Friday's record 8.9-magnitude earthquake hit, unleashing a terrifying 10-metre (33-foot) wave that tore through coastal towns and cities, destroying all in i ... [more](#)



CIVIL NUCLEAR**Another quake-hit Japan reactor in trouble: operator**

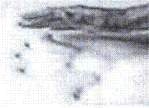
Tokyo (AFP) March 13, 2011 - The operator of a quake-hit Japanese nuclear plant said Sunday that the cooling system of another reactor was not working and risked a possible explosion. "All the functions to keep cooling water levels in No. 3 reactor have failed at the Fukushima No. 1 plant," said a



spokesman of Tokyo Electric Power
(Tepco). "As of 5:30 am (2030 GMT
Saturday), water injection stopped and
inside pressu ... [more](#)

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