

From: McIntyre, David
Sent: Thursday, August 20, 2015 2:44 PM
To: Shannon, Valerie
Subject: FW: NRC response on High Burnup Fuel research project
Attachments: Tab B - 08-14-15 Leyse 15-0426.pdf

From: McIntyre, David
Sent: Wednesday, August 19, 2015 3:19 PM
To: 'bobleuse@aol.com'
Subject: NRC response on High Burnup Fuel research project

Mr. Leyse –

Roger Hannah in our Region II Public Affairs office asked me to respond to your inquiry, as this project is being handled out of Headquarters. I hope this information I have gathered from staff in two program offices and from our Resident Inspector at North Anna is responsive to your questions. Please understand that we are attempting in good faith to provide you with, or point you to, the publicly available information you seek. Some questions can be difficult to answer, as these are complex technical subjects. If you have any additional questions, please don't hesitate to email me, and we will try to answer them.

This high burnup fuel dry storage research project is funded by the US Department of Energy, EPRI and Dominion. In addition to the February public meeting you noted in one of your emails (ML15082A346), there was a subsequent public meeting on May 13 (ML15159A558), during which Dominion provided an overview of its plans to request a license amendment.

The project involves two activities:

1. The licensing and eventual placement of a "demonstration cask" on the ISFSI pad at North Anna; and
2. The removal and shipment of "sister" rods to either INL or Oak Ridge for wet storage and eventual testing. (This appears to be the part you are most concerned about.)

For Activity 1: The high burnup fuel dry storage research project is intended to provide confirmatory data on high burnup fuel performance in dry cask storage. The proposal is to outfit a storage cask with thermocouples for temperature measurements and to provide a means to periodically take gas samples for evaluating the inner atmosphere of the canister during loading and the storage period. The cask design has not yet been reviewed by the NRC.

As noted in the May 13 meeting summary, Dominion plans to submit a license amendment request to add this cask design to their ISFSI license. The license amendment request is expected to include information about the cask design, the fuel to be loaded, and any necessary technical specification changes associated with the loading and storage of this cask. The NRC staff anticipates receiving this application within the next month. Once it is received, the application will be placed into ADAMS and a notice of docketing will be published in the Federal Register.

Dominion has identified specific assemblies they intend to place into the demonstration cask. This information was presented in the public meeting held on May 13th. The proposed configuration and assembly information is included on Dominion's slide 5 (ML15153A045). This slide includes the cladding type, initial enrichment and burnup for each assembly. The average assembly burnup ranges from 50.0 gigawatt-days per metric ton of uranium (GWd/MTU) to 55.5 GWd/MTU. The sister rods will have the same characteristics as the assemblies identified for the demonstration cask.

The NRC staff would expect to complete its review of the cask design in 2016. Once the license amendment is issued, loading of the cask is expected in the summer of 2017. The cask is to remain at the North Anna ISFSI until 2027, when the fuel will be shipped to a national lab for testing.

For Activity 2: The "sister" rods were fuel pins selected from assemblies that are to go into the demonstration cask in Activity 1, or from an analog assembly that mirrors one going into the demonstration cask. There is no change required to the Part 72 license for the ISFSI or the ISFSI technical specifications for the sister rods. All of the work to remove the rods and place them into the shipping container was performed under Dominion's Part 50 operating reactor license. That's why this work could proceed before the license amendment review.

The sister rods were extracted in June and placed in a shipping container that remains in the North Anna fuel pool. The average burnup for the sister rods should range from 50.0 GWd/MTU up to 55.5 GWd/MTU, reflecting the assemblies identified for the demonstration cask. It is expected to be transported in early 2016, either to INL or Oak Ridge. DOE will determine the destination and plan the route.

We monitor the movement of all spent fuel through various inspection procedures, during ISFSI loadings, inspections of special nuclear material every three years, and shuffling of assemblies in the fuel pool. The extraction of the sister rods occurred under NRC's routine inspection and review of Dominion's spent fuel management operations. There were no indications of damage to the pins during the extraction.

I hope this thorough explanation is responsive to your questions.

Regards,
David McIntyre

David McIntyre
Office of Public Affairs
U.S. Nuclear Regulatory Commission
301-415-8200

From: Bobleyse@aol.com
Sent: Friday, August 14, 2015 11:52 AM
To: CHAIRMAN Resource
Cc: Hannah, Roger; kari_emon@risch.senate.gov; gfoley@mtexpress.com; heather.dawson@hailcityhall.org
Subject: [External_Sender] Fwd: A few deep questions and requests

NRC Chairman:

In the email of 8/13/2015, Roger Hannah tells me that, *The NRG does not have specific details about the removal procedures, but Dominion or DOE may be able to provide further information, and that, The specific licensing action is a Part 72 ISFSI technical specification change and there are ongoing discussions between the Dominion, DOE and the NRG regarding this action, including an upcoming September meeting.*

Chairman, it is very strange that NRC is unaware of the details of the removal procedures. What are all of those Resident Inspectors doing and how does stuff like this happen without a detailed and advanced review by NRC? Also it is strange that removal operations took place in advance of the Part 72 ISFSI technical specification change (whatever that is) and the ongoing discussions, etc.?

I asked straightforward questions, and received a reply that does not address several of the questions although that reply certainly has pertinent facts.

Chairman, please get answers to all of my questions and send me a complete report with easily accessible references that tell me what is going on. Apparently rods were removed from several bundles. Apparently the rods will be shipped in a water-filled container which I infer from the statement, *These sister rods will be kept wet at the facility upon arrival.*

It is revealing that, *The rods were placed in a NAG, Inc basket which is in the North Anna spent fuel pool. They will be capped and then placed into a NAG, Inc. transportation cask that is currently scheduled to go to INEL (or Oak Ridge) in January 2016. DOE is planning the route.*

Chairman, get me the answers with accessible references, especially those that have the details of the processes and impact of the pulling of the rods from the fuel assemblies.

Thank you,

Robert H. Leyse

copy by U. S. Mail to:

State of Idaho
Office of the Attorney General
700 W. Jefferson Street, Suite 210
P.O. Box 83720
Boise, Idaho 83720-0010

From: Bobleyse@aol.com
To: Roger.Hannah@nrc.gov, OPP12.Resource@nrc.gov
CC: rthornberry@postreg.ister.com, gfoley@mtexpress.com, CHchairman.resource@nrc.gov
Sent: 8/13/2015 2:39:52 P.M. Mountain Daylight Time
Subj: Re: A few deep questions and requests

Roger:

Thank you for the additional data, however, my questions remain unanswered and I believe that it is the NRC's duty to know the answers and provide them to me.

Robert H. Leyse

In a message dated 8/13/2015 10:51:07 AM. Mountain Daylight Time, Roger.Hannah@nrc.gov writes:

Mr. Leyse—

The specific licensing action is a Part 72 ISFSI technical specification change and there are ongoing discussions between the Dominion, DOE and the NRC regarding this action, including an upcoming September meeting. Dominion, the company that operates the North Anna plant is aware that the State of Idaho Governor and the public are interested in this project and DOE has been the state's point of contact.

The high burn-up (HBU) spent fuel (referred to as sister rods) is being loaded into a cask and being picked up by DOE and EPRI for delivery to INEL (or Oak Ridge):

- 25 analog rods were pulled from North Anna's spent fuel (some from the actual assemblies that will go into the HBU cask); these rods are considered representative of the HBU cask rods.
- The rods were pulled on schedule in June.
- The rods were placed in a NAC, Inc basket which is in the North Anna spent fuel pool. They will be capped and then placed into a NAC, Inc. transportation cask that is currently scheduled to go to INEL (or Oak Ridge) in January 2016. DOE is planning the route.
- These sister rods will be kept wet at the facility upon arrival. Some will be cut up and all of them will be monitored for any changes that occur.
- After 10 years, the fuel from that cask will be shipped to the DOE facility that has received the sister rods. That facility will then compare the sister rods to the HBU cask rods (i.e., compare wet to dry storage) to identify any concerns. This information will form the basis for storing high burn-up fuel in dry containers in the future.

The NRC does not have specific details about the removal procedures, but Dominion or DOE may be able to provide further information.

Please let us know if you have additional questions.

Roger Hannah, APR

Senior Public Affairs Officer

Region II -- Atlanta, Ga.

Office - 404-997-4417

Mobile - 404-317-3879

roger.hannah@nrc.gov

U.S.NRC

United States Nuclear Regulatory Commission
Protecting the Public and the Environment

From: Bobleyse@aol.com [mailto:Bobleyse@aol.com]
Sent: Sunday, August 09, 2015 12:33 PM
To: Hannah, Roger <Roger.Hannah@nrc.gov>; RidsNrrPMNorthAnna Resource <RidsNrrPMNorthAnna.Resource@nrc.gov>; OPA2 Resource <OPA2.Resource@nrc.gov>
Cc: rthornberry@postregister.com; gfoley@mtexpress.com; CHAIRMAN Resource <CHAIRMAN.Resource@nrc.gov>
Subject: (External_Sender] Fwd: A few deep questions and requests

Roger:

I have not received any reply to my inquiry. Please reply, these are deep concerns, however, the answers are at the NRC's fingertips.

My last question in the forwarded email is: *Have the fuel rods been removed from the bundle?*

Via GOOGLE, I found out that the fuel rods have been removed.

DOE stated that 25 "sister rods" would be shipped from North Anna to the Idaho National Laboratory (INL) in early 20J6. Of the 25 "sister rods," nine with M5 cladding had been chosen and placed into a container in the North Anna spent fuel pool. In addition, approximately 14 fuel rods with Zirlo cladding and a variety of fuel rods with Zircaloy-4 cladding had been chosen as potential "sister rods," but they had not been loaded into the container in the North Anna spent fuel pool.

So, Roger, the fuel rods have been removed. Apparently the fuel rods were removed from more than one bundle since nine have M5 cladding and approximately 14 fuel rods with Zirlo cladding and a variety of fuel rods with Zircaloy-4 cladding had been chosen. Please tell me about the removal procedures. Were the rods scratched or otherwise impacted?

As I mentioned, there is a lot of commotion in Idaho, and it is not going to evaporate. So, please respond promptly to all of our deep concerns.

Robert H. Leyse

From: Boblevse@aol.com
To: roger.hannah@nrc.gov
CC: rthornberry@postregister.com, gfoley@mtexpress.com
Sent: 8/11/2015 11:04:03 A.M. Mountain Daylight Time
Subj: A few deep questions and requests

Roger:

For the distribution of this e-mail, you are:

- Sr. Public Affairs Officer:
Roger Hannah - 404-997-4417

at the North Anna Power Station, Unit 1

I have a few questions. Here is brief background:

There is commotion in Idaho that arises from the plans to ship 25 fuel rods from North Anna to the Idaho National Laboratory. Here are a few quotes from Idaho news media:

The proposal called for two shipments of 25 commercial spent nuclear fuel rods, one in June and one in January 2016. In total, the fuel would weigh roughly 200 pounds.

The second would be obtained from the North Anna Power Station in Virginia.

The second shipment of rods would be used for researching nuclear fuel storage.

Here are some deep questions and requests:

Tell me how to find the documents on the NRC's web site that detail the licensing by the NRC and that describe the removal of 25 fuel rods from a fuel bundle at the North Anna site.

Since the fuel rods are firmly mounted with spring loading at several points, tell me how the rods are removed without producing significant scratching.

Has the fuel bundle ever been chemically or ultrasonically cleaned?

How many months has the fuel been operated at significant power; that is, greater than fifty percent?

Have the fuel rods been removed from the bundle?

Thank you,

Robert Leyse

P. O. Box 2850

Sun Valley , ID 83353

(208) 622-7740