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BVY 14-066

DATE: 8/28/14

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SUBJECT: VY's Third 6-month

Status Report for SFPI (EA-12-051)

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Latest update: August 7, 2014 (DWR)



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Christopher J. Wamser  
Site Vice President

BVY 14-066

August 28, 2014

U.S. Nuclear Regulatory Commission  
ATTN: Document Control Desk  
Washington, DC 20555-0001

**SUBJECT:** Vermont Yankee's Third Six-Month Status Report in Response to March 12, 2012 Commission Order Modifying Licenses with Regard to Reliable Spent Fuel Pool Instrumentation (Order Number EA-12-051) and Request to Rescind Order Vermont Yankee Nuclear Power Station  
Docket No. 50-271  
License No. DPR-28

**REFERENCES:**

1. NRC Order Number EA-12-051, Issuance of Order to Modify Licenses with Regard to Reliable Spent Fuel Pool Instrumentation, dated March 12, 2012 (ML12054A679)
2. NRC Interim Staff Guidance JLD-ISG-2012-03, Compliance with Order EA-12-051, Reliable Spent Fuel Pool Instrumentation, Revision 0, dated August 29, 2012 (ML12221A339)
3. Vermont Yankee's Overall Integrated Plan in Response to March 12, 2012 Commission Order Modifying Licenses with Regard to Reliable Spent Fuel Pool Instrumentation (Order Number EA-12-051), BVY 13-015, dated February 28, 2013 (ML13064A301)
4. Notification Of Permanent Cessation Of Power Operations, BVY 13-079, dated September 23, 2013 (ML13273A204)
5. Vermont Yankee's Second Six-Month Status Report in Response to March 12, 2012 Commission Order Modifying Licenses with Regard to Reliable Spent Fuel Pool Instrumentation (Order Number EA-12-051), BVY 14-015, dated February 26, 2014 (ML14064A200)

Dear Sir or Madam:

On March 12, 2012, the Nuclear Regulatory Commission (NRC) issued an Order (Reference 1) to all power reactor licensees. Reference 1 was immediately effective and directs Entergy Nuclear Operations, Inc. (ENO) to install reliable spent fuel pool level instrumentation at the Vermont Yankee Nuclear Power Station (VY). Specific requirements are outlined in Attachment 2 of Reference 1.

Reference 1 required submission of an initial status report 60 days following issuance of the final interim staff guidance (Reference 2) and an overall integrated plan pursuant to Section IV, Condition C. Reference 1 also requires submission of a status report at six-month intervals following submittal of the overall integrated plan. Reference 3 provided the VY overall integrated plan for reliable spent fuel pool instrumentation.

Reference 4 notified the NRC that ENO had decided to permanently cease power operations of VY in the fourth quarter 2014. Reference 5 provided the second VY six-month status report which reflected the decision to permanently cease power operations of VY.

The purpose of this letter is to (1) provide the third six-month status report pursuant to Section IV, Condition C.2, of Reference 1, and (2) request rescission of the order (Reference 1) upon docketing of the 10CFR50.82(a)(1) certifications for permanent cessation of operations and permanent removal of fuel from the reactor vessel.

Should you have any questions regarding this submittal, please contact Mr. Coley Chappell at (802) 451-3374.

This letter contains no new regulatory commitments.

I declare under penalty of perjury that the foregoing is true and correct; executed on August 28, 2014.

Sincerely,

 Michael Anthony Romeo Sr. for CJW

CJW / JTM

- Attachments:
1. Vermont Yankee's (VY) Third Six-Month Status Report for the Implementation of Order EA-12-051, Order Modifying Licenses with Regard to Requirements for Reliable Spent Fuel Pool Instrumentation
  2. Request to Rescind Order EA-12-051

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**Attachment 1 to**

**BVY 14-066**

**Vermont Yankee's (VY) Third Six Month Status Report for the  
Implementation of Order EA-12-051, Order Modifying Licenses with  
Regard to Requirements for Reliable Spent Fuel Pool Instrumentation**

## BVY 14-066 Attachment 1

### Vermont Yankee’s (VY) Third Six Month Status Report for the Implementation of Order EA-12-051, Order Modifying Licenses with Regard to Requirements for Reliable Spent Fuel Pool Instrumentation

#### 1. Introduction

VY developed an overall integrated plan (OIP)(Reference 1 in Section 8), documenting the requirements to install reliable spent fuel pool level instrumentation (SFPI), in response to Reference 2. This attachment provides an update of milestone accomplishments since the last status report, including any changes to the compliance method, schedule, or need for relief/relaxation and the basis, if any.

On September 23, 2013, Entergy notified the NRC that it has decided to permanently cease power operations at the Vermont Yankee Nuclear Power Station (VY) at the end of the current operating cycle (Reference 6). Entergy is requesting rescission of Order EA-12-051 upon docketing of the 10CFR50.82(a)(1) certifications for permanent cessation of operation and permanent removal of fuel from the reactor vessel (Attachment 2).

#### 2. Milestone Accomplishments

The following milestone(s) have been completed since January 31, 2013, and are current as of July 31, 2014.

- Second Six-Month Status Report — February 2013

#### 3. Milestone Schedule Status

The following provides an update to Attachment 2 of the Overall Integrated Plan. It provides the activity status of each item, and whether the expected completion date has changed. The dates are planning dates subject to change as design and implementation details are developed. Items that were changed are discussed below.

Milestone	Target Completion Date*	Activity Status	Revised Target Completion Date
Reliable SFPI Installed	December 2016	On Hold	**
Respond to NRC RAIs dated June 20, 2013 (Reference 3)	July 19, 2013	Complete	**
Respond to NRC RAIs contained in Interim Staff Evaluation	June 2016	See Section 6	**

\* - Target Completion Date is the last submitted date from either the OIP or previous six-month status report.

\*\* - Entergy is requesting rescission of Order EA-12-051 upon docketing of the 10CFR50.82(a)(1) certifications for permanent cessation of operation and permanent removal of fuel from the reactor vessel (Attachment 2).

#### **4. Changes to Compliance Method**

On September 23, 2013, Entergy notified the NRC that it has decided to permanently cease power operations at VY at the end of the current operating cycle (Reference 6). Entergy is requesting rescission of Order EA-12-051 upon docketing of the 10CFR50.82(a)(1) certifications for permanent cessation of operation and permanent removal of fuel from the reactor vessel (Attachment 2).

Although Entergy fully intends to permanently cease operations, should Entergy not permanently cease operations, Entergy plans to submit, in June 2015, a revised OIP.

#### **5. Need for Relief/Relaxation and Basis for the Relief/Relaxation**

Entergy is requesting rescission of Order EA-12-051 upon docketing of the 10CFR50.82(a)(1) certifications for permanent cessation of operation and permanent removal of fuel from the reactor vessel (Attachment 2).

#### **6. Open Items from Overall Integrated Plan and Interim Staff Evaluation**

VY has received an Interim Staff Evaluation (Reference 7) that includes 18 RAIs. Responses to the RAIs were requested by March 31, 2014, based on a Fall 2014 implementation date; the target completion date for the RAI responses has been revised as discussed in Section 3. Entergy is requesting rescission of Order EA-12-051 upon docketing of the 10CFR50.82(a)(1) certifications for permanent cessation of operation and permanent removal of fuel from the reactor vessel (Attachment 2).

#### **7. Potential Interim Staff Evaluation Impacts**

Entergy is requesting rescission of Order EA-12-051 upon docketing of the 10CFR50.82(a)(1) certifications for permanent cessation of operation and permanent removal of fuel from the reactor vessel (Attachment 2).

#### **8. References**

The following references support the updates to the overall integrated plan described in this attachment.

1. Vermont Yankee's Overall Integrated Plan in Response to March 12, 2012 Commission Order Modifying Licenses with Regard to Reliable Spent Fuel Pool Instrumentation (Order Number EA-12-051), BVY 13-015, dated February 28, 2013. (ML13064A301)
2. NRC Order Number EA-12-051, Issuance of Order to Modify Licenses with Regard to Reliable Spent Fuel Pool Instrumentation, dated March 12, 2012. (ML12054A679)
3. Vermont Yankee Nuclear Power Station – Request for Additional Information RE: Overall Integrated Plan for Reliable Spent Fuel Pool Instrumentation (Order EA-12-051) (TAC NO. MF0780), dated June 20, 2013. (ML13165A279)
4. Response to Request for Additional Information Re: Overall Integrated Plan for Reliable Spent Fuel Pool Instrumentation (Order EA-12-051), BVY 13-065, dated July 19, 2013. (ML13204A386)
5. Vermont Yankee's First Six-Month Status Report in Response to March 12, 2012 Commission Order Modifying Licenses with Regard to Reliable Spent Fuel Pool Instrumentation (Order Number EA-12-051), BVY 13-075, dated August 28, 2013 (ML13247A029)
6. Notification Of Permanent Cessation Of Power Operations, BVY 13-079, dated September 23, 2013 (ML13273A204)
7. Vermont Yankee Nuclear Power Station -Interim Staff Evaluation And Request For Additional Information Regarding The Overall Integrated Plan For Implementation Of Order EA-12-051, Reliable Spent Fuel Pool Instrumentation (TAC No. MF0780), dated November 26, 2013 (ML13311B077)

**Attachment 2 to**

**BVY 14-066**

**Request to Rescind Order EA-12-051**

**Order Modifying Licenses with Regard to Requirements for Reliable  
Spent Fuel Pool Instrumentation**

## **BVY 14-066 Attachment 2**

### **Request to Rescind Order EA-12-051**

#### **1. Request to Rescind Order**

On March 12, 2012, the Nuclear Regulatory Commission (NRC) issued Order EA-12-051, "Order to Modify Licenses with Regard to Requirements for Reliable Spent Fuel Pool Instrumentation" (the Order) to Entergy Nuclear Operations, Inc. (Entergy) for the Vermont Yankee Nuclear Power Station (VY). The Order requires completion of full implementation of the requirements in the Order no later than two (2) refueling cycles after submittal of the overall integrated plan, or December 31, 2016, whichever comes first. VY responded to the Order by letters dated March 30, 2012 (BVY 12-022, ML12094A043), October 26, 2012 (BVY 12-073, ML12306A086), February 28, 2013 (BVY 13-015, ML13064A301), August 28, 2013 (BVY 13-075, ML13247A029) and February 26, 2014 (BVY 14-015, ML14064A200).

In a September 23, 2013 letter (BVY 13-079, ML13273A204) VY notified the NRC that Entergy had decided to permanently cease power operations of VY at the end of the current operating cycle (expected in the fourth quarter of 2014). Since VY will permanently cease power operations at the end of the current operating cycle (estimated to be the 4<sup>th</sup> quarter 2014), there will be no further refueling outages, startups from refueling outages, or refueling cycles. As a result, the full implementation date required by the Order is December 31, 2016.

In accordance with Section IV of the Order, Entergy requests that the NRC rescind the Order in its entirety upon docketing of the 10CFR50.82(a)(1) certifications for permanent cessation of operation and permanent removal of fuel from the reactor vessel. Good cause for this request is provided below.

#### **2. Basis for Rescission Request**

Section IV of the Order provides the NRC's Director of the Office of Nuclear Reactor Regulation the authority to relax or rescind any or all of the conditions of the Order upon demonstration by the licensee of good cause.

By letter dated September 23, 2013 (BVY 13-079, ADAMS Accession No. ML13273A204) VY notified the NRC that Entergy had decided to permanently cease power operations of VY at the end of the current operating cycle (expected in the fourth quarter of 2014).

Section III of the Order states that the Commission determined that all power reactor licensees and construction permit holders must have a reliable means of remotely monitoring wide-range Spent Fuel Pool (SFP) levels to support effective prioritization of event mitigation and recovery actions in the event of a beyond-design-basis external event. This statement forms the basis of the Order and reflects the need to effectively deploy limited resources to mitigate very low frequency events with the potential to challenge both the reactor and SFP. With reliable indication of the SFP coolant level, decision-makers can determine when to deploy resources to the SFP and avoid unnecessary deployment of staff to monitor pool level.

Upon docketing of the 10 CFR 50.82(a)(1) certifications for permanent cessation of operations and permanent removal of fuel from the reactor vessel, the 10 CFR 50 license will no longer authorize operation of the reactor or emplacement or retention of fuel into the reactor vessel. The safety of the irradiated fuel in the SFP will be the primary safety function for site personnel. In the event of a challenge to the safety of fuel stored in the SFP, decision-makers would not have to prioritize actions and the focus of the staff would be the SFP condition. Thus, the basis for the Order will no longer apply to the configuration of VY.

### **3. Spent Fuel Pool Level Indication**

Two independent channels of SFP direct level indication are installed. The SFP level instrument loops have a calibrated range of 2'-1"; this corresponds to approximate elevations of 345'-0" for the upper limit of the range (approximately 1'-4" above normal pool level of 343'-8") to 342'-11" for the lower limit of the range (approximately 6" above the Technical Specification minimum level of 342'-5"). The top of the fuel rack is 321'-3" therefore the level indicators provide indication to approximately 21'-8" above the top of the fuel rack (see Figure 1). The level indication is available on the CAD panels in the control room.

In addition to the above two channels of remote level indication, there are mechanical local SFPC pump suction pressure indicators (PI-84A/B) that are located on seismically designed instrument racks RK-10AA(AB) on Reactor Building elevation 303'-0" (the same elevation as the Standby Fuel Pool Cooling (SFPC) pumps). The local pressure indicators can be utilized to determine SFP level when the SFPC pumps are not operating by correlating indicated static pressure to an equivalent pool level. These pressure instruments require no power and can be used when power is not available to the electronic level indicators. The suction piping of the SFPC pumps connects to the SFP at elevation 336'-6" which is 15'-3" above the top of fuel rack which is at elevation 321'-3" (see Figure 1); therefore the SFPC pumps suction pressure gauges can be used to determine SFP water level down to the point where the suction piping connects to the SFP.

In addition to the instrumentation available for monitoring pool level, the level can also be observed locally from the refueling floor.

Therefore, there is adequate indication available to determine the level in the SFP.

### **4. Conclusion**

Upon docketing of the 10 CFR 50.82(a)(1) certifications for permanent cessation of operations and permanent removal of fuel from the reactor vessel, the 10 CFR 50 license will no longer authorize operation of the reactor or emplacement or retention of fuel into the reactor vessel. Since VY is permanently shutting down and defueling, no additional fission products will be generated from the plant after shutdown and the decay heat load on the spent fuel will continue to decline.

After the station is permanently shutdown and the reactor permanently defueled, the requirements of the Order are unnecessary. In the event of a challenge to the safety of fuel stored in the SFP, decision-makers would not have to prioritize event mitigation and recovery actions; the focus of the staff would be the SFP condition. Thus, the basis for the Order will no longer apply to the configuration of VY. The evaluation that VY has performed demonstrates good cause to support VY's request that the Order be rescinded in its entirety upon docketing of the 10 CFR 50.82(a)(1) certifications for permanent cessation of operations and permanent removal of fuel from the reactor vessel.

POOL LEVELS AND REFERENCES

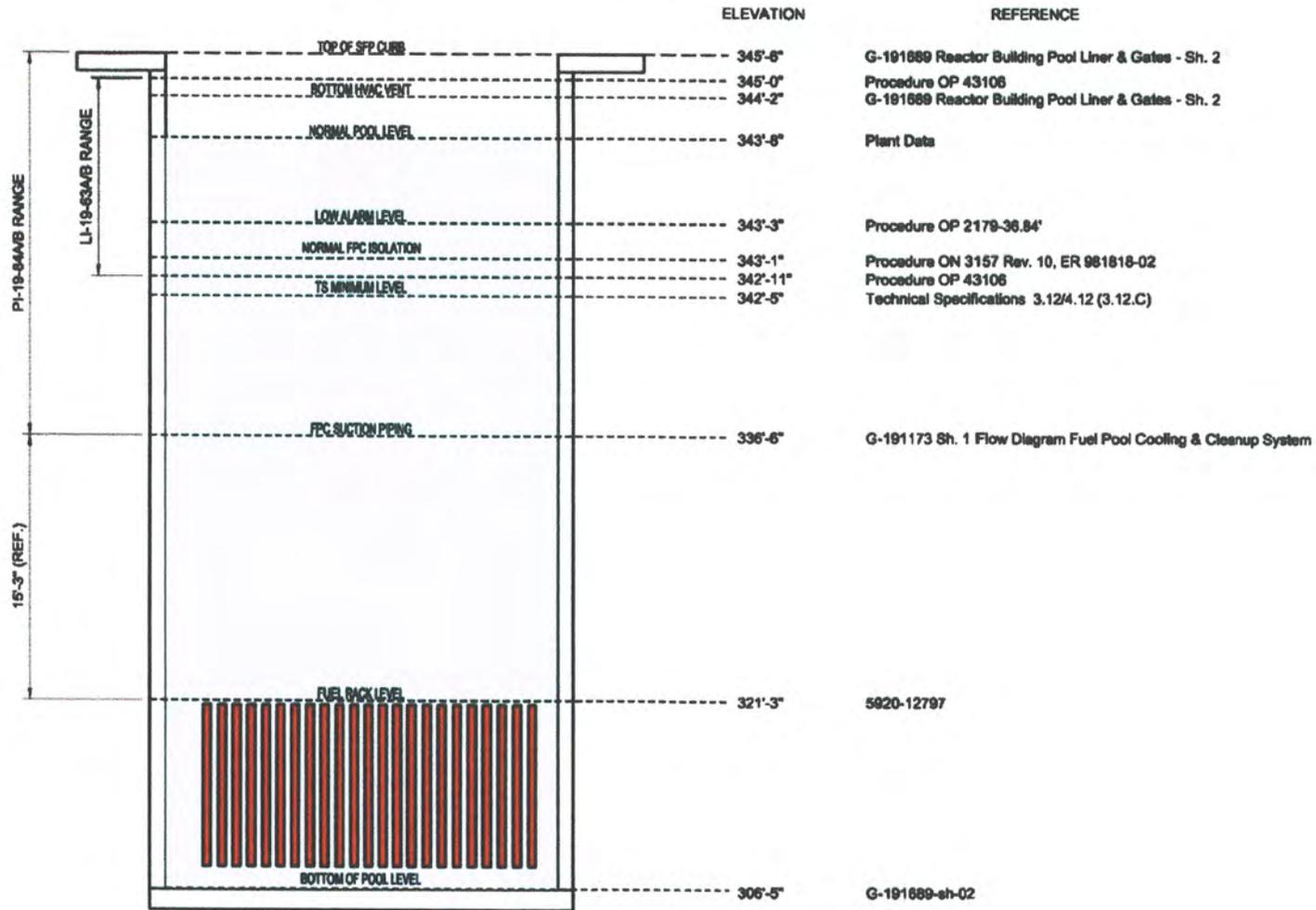


FIGURE 1 (SFP Elevation View with Levels Indicated)