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10 CFR 50.71(e)
10 CFR 50.4(b)(6)

BVY 17-033

September 28, 2017

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

SUBJECT: Defueled Safety Analysis Report, Revision 1
Vermont Yankee Nuclear Power Station
License No. DPR-28
Docket Nos. 50-271

REFERENCES: 1. Letter, Entergy Nuclear Operations, Inc. to USNRC, "Defueled Safety Analysis Report, Revision 0," BVY 15-046, dated September 1, 2015 (ML15266A267)

Dear Sir or Madam:

Pursuant to 10 CFR 50.71(e) and 10 CFR 50.4(b)(6), Entergy Nuclear Operations, Inc. hereby submits Revision 1 of the Vermont Yankee Nuclear Power Station (VY) Defueled Safety Analysis Report (DSAR). The DSAR is maintained considering the guidance contained within NRC Regulatory Guide 1.184, "Decommissioning of Nuclear Power Reactors," Revision 1, and serves the same function during decommissioning that the Updated Final Safety Analysis Report (UFSAR) served during operation of the facility.

Attachment 1 identifies the changes that were incorporated into Revision 1 of the DSAR and lists the DSAR sections affected by each change.

Attachment 2 provides a summary of a change to the facility that required an evaluation to be performed under the provisions of 10 CFR 50.59, submitted pursuant to 10 CFR 50.71(e)(2) and 10 CFR 50.59(d)(2), and covering the period between September 1, 2015 (Reference 1) and September 28, 2017.

The Enclosure to this letter is a CD-ROM containing Revision 1 of the DSAR. Changes to the DSAR are indicated by revision bars. This is a complete revision of the DSAR, and all pages have been converted to Revision 1.

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NRR

This letter contains no new regulatory commitments. Should you have any questions concerning this letter, please contact Coley Chappell at (802) 451-3374.

I declare under penalty of perjury that the foregoing is true and correct. Executed on September 28, 2017.

Sincerely,



JWB/tbs

Attachments: 1. Defueled Safety Analysis Report (DSAR) Revision 1 Changes
2. Biennial 10 CFR 50.59 Report

Enclosure: 1. VYNPS Defueled Safety Analysis Report Revision 1 (CD-ROM)

cc: Mr. Daniel H. Dorman
Regional Administrator, Region 1
U.S. Nuclear Regulatory Commission
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Mr. Jack D. Parrott, Sr. Project Manager
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Ms. June Tierney, Commissioner
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Attachment 1

Vermont Yankee Nuclear Power Station

Defueled Safety Analysis Report (DSAR) Revision 1 Changes

Vermont Yankee Defueled Safety Analysis Report (DSAR) Revision 1 Changes

Change #	Sections Affected	Brief Description of Change
FCR 27/07	1.3.1.2 2.5.2.1 3.1.3 3.1.3.1 3.1.3.1.1 3.1.3.1.2 3.1.3.2.1 3.1.4 3.2.7.1 3.2.7.2 3.2.8	Installation of second expansion (West) pad for the Independent Spent Fuel Storage Installation (ISFSI) storage pad (Engineering Change EC47794), providing additional ISFSI storage pad locations for a total of up to 58 spent fuel storage casks, with four (4) spare locations to accommodate cask movements, and up to three (3) locations for casks used to store Greater-Than-Class C (GTCC) waste.
FCR 27/08	4.7.1.3.3 4.7.1.3.4 4.7.1.3.5 Table 4.7.1.1	Retires the Reactor Protection System (RPS) motor generator sets and removes the requirement that the RPS system is in compliance with IEEE Standard 279 "Criteria for protection systems." As a result, interlocks were removed such that the RPS maintenance tie can be closed to simultaneously power both RPS busses from a single source of power, to support the equipment that remains connected to either of these buses with the facility in shutdown status (EC48397).
FCR 27/11	3.3.5.3 3.3.5.3.1 3.3.5.3.2 3.3.5.3.5 3.3.5.3.6 3.3.5.3.7	Partial abandonment of HVAC, which includes abandoning heating for Turbine Building (TB), Radwaste and Advanced Offgas (AOG) and reclassifying systems previously classified as safety-related (EC49916).
FCR 27/18	3.3.3.4.3 3.3.3.4.4	Removal of AS-2 battery (EC51525) and relocation of Main Station Batteries (EC51650).
FCR 27/22	7.2.1 Table 7.4 (Items 1, 54)	Removes Section 7.2.1, Buried Piping Inspection Program, and Items 1 and 54 from the table in Section 7.4.
FCR 27/25	1.3.5.1 2.4.3.4 2.4.8 3.1.3.1.1 3.1.3.1.2 3.1.3.1.3 3.2.2.2 3.2.2.3 3.3.2.2 3.3.2.3 3.3.2.4 3.3.3.3 3.3.3.4 3.3.3.4.4 3.3.5.3.2 7.2.8 7.2.15 Table 7.4 (Item 17)	Abandonment of emergency diesel generators, diesel lube oil and independent diesel fuel oil systems (EC49915), includes revisions to a License Renewal Commitment 17 and Periodic Surveillance and Preventive Maintenance Program.

Change #	Sections Affected	Brief Description of Change
FCR 27/29	3.3.3.5.3 3.3.4.1 4.7.1.2.3 Table 4.7.1.1	Abandonment of alternate power source for radiation monitors RM-17-351 and RM-17-352 and abandonment of RM-17-350 and RM-17-359 (EC57946).
DCR 01/01 DCR 01/05 DCR 01/07	1.3.5.3 3.3.4.1 3.3.4.3 3.3.4.4 7.2.4 Table 7.4 (Item 49)	Modified the Fire Protection (FP) system in the Turbine Building that resulted in the FP piping (with the exception of 8"FP-6A) being isolated and drained in the Admin Building, Control Building, and Turbine Building (EC 51464). Cancellation License Renewal Commitment 49. Fire hydrant hose testing & eliminate the 5-man fire brigade. Engineering Change 51405 - Abandon equipment made non-functional by EC 51464, and modifies logic trains to eliminate fire detection that is no longer necessary.
DCR 01/03	7.2.17 Table 7.4 (Item 32)	Changes to Metal Enclosed Bus Aging Management Program and associated License Renewal Commitment # 32.
DCR 01/04	5.5.2 5.5.3	Onsite Safety Review Committee (OSRC) replaced with Independent Safety Review (ISR), consistent with previous NRC approval of changes incorporated into the VY Quality Assurance Program Manual (QAPM).
DCR 01/06	2.2.4 3.3.11.2 3.3.11.6 4.2.3.3 4.3.2 4.7.2.3.1 4.7.2.3.2 4.7.2.4 Table 4.7.2.4	Incorporated NRC approved changes to the VY Emergency Plan into the DSAR, including removal of references to Emergency Plan in descriptions of Controlled Area, Exclusion Area, Low Population Zone.
DCR 01/08	3.3.1.3.3	Utilize the Torus as a source of makeup water to the spent fuel pool (EC 48595).
DCR 01/09	3.3.5.3.3	Install chiller SCH-3 to provide Control Room cooling (EC63462).
DCR 01/11	4.7.1.1.3 Table 4.7.1.3	Abandon in place Stack Gas Monitor III (EC65057).
DCR 01/12	3.3.8	Incorporate changes as a result of the abandonment of the Demin Water Transfer System and Makeup Demineralizer System (EC49153).
DCR 01/13	3.3.9.1 3.3.9.3 3.3.9.4 3.3.10	Abandonment of Sentry Lights (EC68790).

Change #	Sections Affected	Brief Description of Change
DCR 01/15	2.4.5 2.6.2 2.6.2.1 2.6.2.2 2.6.2.4.1 2.6.2.4.3 2.6.3 3.3.7.3.3 4.7.1.1.3 4.7.1.1.3 Table 4.7.2.4	Elimination of Iodine-131 samples and related changes, consistent with changes to the Offsite Dose Calculation Manual (ODCM) Revision 38.
DCR 01/17	7.2.15	Elimination of "Water Chemistry Control – Closed Cooling Program."
DCR 01/18	Various Appendix A	Delete references to equipment abandoned or no longer in service, provide consistency changes throughout document, elimination of various figures not required to be incorporated by reference in the DSAR; removes Appendix A "Structural Analysis" and other historical information; and incorporates various editorial and administrative changes.
DCR 01/19	7.2.18 Table 7.4 (Item 42)	Elimination of "Bolted Cable Connection Program."
DCR 01/20	7.2.8 Table 7.4 (Items 26,46)	Remove commitments associated with the John Deere (Security) Diesel Generator as a result of current plant status.
DCR 01/21	1.3.4.3 4.7.2.3.1 4.7.2.4 Table 4.7.2.2	Abandonment of various area radiation monitors (EC 48148).

Attachment 2

Vermont Yankee Nuclear Power Station

Biennial 10 CFR 50.59 Report

Vermont Yankee Nuclear Power Station
Biennial 10 CFR 50.59 Report

Evaluation Summary

This report is being provided pursuant to 10 CFR 50.71(e)(2) and 10 CFR 50.59(d)(2), for the reporting of evaluations of changes to the facility under the provisions of 10 CFR 50.59, covering the period between September 1, 2015 and September 28, 2017. During this period, there was one change which required an evaluation under 10 CFR 50.59:

Title: Implement Reactor Building Crane Restricted Load Path (Engineering Change 54428)

Year Implemented: 2016

Brief Description:

This activity replaces the use of mechanical stops with electrical interlocks when using the reactor building crane to move casks over the spent fuel pool, thus preventing the cask from being moved over irradiated fuel.

Summary of Evaluation:

The change evaluated was the use of electrical interlocks to provide restricted path capability to limit cask travel over the spent fuel pool and eliminate the requirement to use mechanical stops for the same purpose.

The mechanical stops defined travel limits within the area of the spent fuel pool where the cask pad is located and no spent fuel is located. Prior to cask operations near or in the spent fuel pool, mechanical stops were temporarily installed in predetermined locations corresponding to the limits of the cask pad on the north, south, and west bounds. Travel to/from the east is not limited as this is the pathway to/from the pool.

This change added a mode to the crane control system to similarly limit the travel of the bridge and trolley by means of electrical interlocks, selectively enabled using a restricted path cab console selector switch. When selected, dedicated restricted path limit switches restrict bridge travel in the north and south directions and restrict trolley travel in the west direction. These bounds are determined by the position of the limit switches, and align with, or may be more conservative than, the bounds imposed by the mechanical stops. Operating the crane and reaching a restricted path limit results in an activation of the limit switch and an immediate halt through normal braking action of bridge and trolley motion. The only allowed direction of travel then is in the reverse direction.

The mechanical stops used to limit the travel path of the reactor building crane were replaced with electrical interlocks. NUREG-0612 establishes these two methods as viable alternatives to limit travel. Administrative controls pertaining to cask movements over the spent fuel pool are modified to reflect this change. Periodic and prerequisite testing is defined to ensure the performance of the electrical interlocks. Based on a review of the licensing and design basis of the reactor building crane, and a review of regulatory and industry guidance and information related to lifting heavy loads near the spent fuel pool, the proposed activity was evaluated

against the eight 10 CFR 50.59 criteria and determined that this change could be implemented without prior NRC approval.

This change does not result in more than a minimal increase in the frequency of occurrence or consequences of an accident previously evaluated in the DSAR, which is a fuel handling accident (FHA). This change involves the reactor building crane, which does not handle irradiated fuel assemblies, and therefore it cannot lead to a FHA. The change does not affect functions of equipment designed to control the release of radioactive material or result in any new pathways for radioactive material release. The change is associated with equipment used to move spent fuel casks, and as previously evaluated in the DSAR, the movement of spent fuel casks by the reactor building does not lead to dose consequences.

This change does not result in more than a minimal increase in the likelihood of occurrence or consequences of a malfunction of a structure, system or component (SSC) important to safety previously evaluated in the DSAR. The change does not affect the previous evaluation of the reactor building crane to meet single failure proof criteria, which pertains to the load path of the crane, including certain mechanical, structural and electrical components which carry or control the load, and does not affect any SSC relied upon to mitigate dose consequences. There is no significant difference in the consequences of a malfunction between the use of mechanical stops and electrical interlocks with the reactor building crane. This change does not introduce the possibility of a malfunction of an SSC with a different result because the change does not introduce a new failure mode for the reactor building crane as described and evaluated in the DSAR, as the change pertains to preventing cask travel over spent fuel and a malfunction of either mechanical stops or electrical interlocks leads to the same condition.

This change does not create a possibility for an accident of a different type since no new failure modes are introduced. This change does not result in a design basis limit for a fission product barrier as described in the DSAR being exceeded or altered. Activities with the potential to have a direct or indirect impact on design basis limits for fission product barriers are associated with fuel cladding and as such, this change does not impact the design basis limits of fission product barriers.

The change to modify the reactor building crane to utilize electrical interlocks instead of mechanical stops to prevent moving heavy loads over irradiated fuel does not result in a departure from method of evaluation described in the DSAR used in establishing the design basis or in the safety analysis. The postulated FHA scenarios described in the DSAR were based on the Alternative Source Term (AST) methodology in Regulatory Guide 1.183, which is not affected by this change.

This change was incorporated into the Vermont Yankee Technical Requirements Manual surveillance requirements for verifying the functionality of the reactor building crane prior to spent fuel cask handling operations.