"Designated Original" per D. Pickett

Entergy

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10 CFR 50.12
10 CFR 50.54(m)

BVY 13-094

October 31, 2013

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

SUBJECT: Request for Exemption from 10 CFR 50.54(m)
Vermont Yankee Nuclear Power Station
Docket No. 50-271
License No. DPR-28

REFERENCES:

1. Letter, Entergy Nuclear Operations, Inc. to USNRC, "Notification of Permanent Cessation of Power Operations," BVY 13-079, dated September 23, 2013

2. Letter, Entergy Nuclear Operations, Inc. to USNRC "Vermont Yankee - Request for Approval of Certified Fuel Handler Training Program," BVY 13-095, dated October 31, 2013

Dear Sir or Madam:

In accordance with 10 CFR 50.12, Entergy Nuclear Operations, Inc. (ENO) requests an exemption from 10 CFR 50.54(m) for Vermont Yankee Nuclear Power Station (VY). The proposed exemption would eliminate the requirement that on-site shifts be staffed with operators licensed under 10 CFR 55 and allow on-site shifts to be staffed with certified fuel handlers and non-certified operators.

On September 23, 2013, ENO informed the NRC that VY will permanently cease operations in the fourth quarter of 2014 (Reference 1). Once VY permanently ceases operations and submits the certifications required by 10 CR 50.82(a)(1), pursuant to 10 CFR 50.82(a)(2), the 10 CFR Part 50 license for VY will no longer authorize operation of the reactor or emplacement or retention of fuel in the reactor vessel.

ENO requests review and approval of this exemption request by November 1, 2014. ENO requests that the approved exemption become effective following NRC approval of a VY Certified Fuel Handler training program (Reference 2) and submittal of the certifications required by 10 CFR 50.82(a)(1).

A001

NRC

This letter contains no new regulatory commitments.

Should you have any questions concerning this letter or require additional information, please contact me at 802-451-3374.

Sincerely,

CCC/plc

Attachment: Request for Exemption from Specific Provisions in 10 CFR 50.54(m)

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Attachment

Vermont Yankee Nuclear Power Station

Request for Exemption from Specific Provisions in 10 CFR 50.54(m)

REQUEST FOR EXEMPTION FROM SPECIFIC PROVISIONS IN 10 CFR 50.54(m)
VERMONT YANKEE NUCLEAR POWER STATION
ENTERGY NUCLEAR OPERATIONS, INC
DOCKET NO. 50-271

I. PROPOSED EXEMPTION

Pursuant to 10 CFR 50.12, Entergy Nuclear Operations, Inc. (ENO) requests a permanent exemption from 10 CFR 50.54(m) for Vermont Yankee Nuclear Power Station (VY). The proposed exemption would eliminate the requirement that on-site shifts be staffed with operators licensed under 10 CFR 55 and allow on-site shifts to be staffed with certified fuel handlers (CFH) and non-certified operators after the certifications required under § 50.82(a)(1) have been docketed. The proposed exemption is consistent with proposed changes to the VY Technical Specifications (TS) in a license amendment request (LAR) submitted in Reference 1.

10 CFR 50.54(m) is restated below. A permanent exemption is being requested from this regulation in its entirety.

(1) A senior operator licensed pursuant to part 55 of this chapter shall be present at the facility or readily available on call at all times during its operation, and shall be present at the facility during initial startup and approach to power, recovery from an unplanned or unscheduled shut-down or significant reduction in power, and refueling, or as otherwise prescribed in the facility license.

(2) Notwithstanding any other provisions of this section, by January 1, 1984, licensees of nuclear power units shall meet the following requirements:

(i) Each licensee shall meet the minimum licensed operator staffing requirements in the following table:

Minimum Requirements[1] Per Shift for On-Site Staffing of Nuclear Power Units by Operators and Senior Operators Licensed Under 10 CFR Part 55

Number of nuclear power units operating[2]	Position	One unit	Two units		Three units	
		One control room	One control room	Two control rooms	Two control rooms	Three control rooms
None	Senior Operator	1	1	1	1	1
	Operator	1	2	2	3	3
One	Senior Operator	2	2	2	2	2
	Operator	2	3	3	4	4
Two	Senior Operator		2	3	[3]3	3
	Operator		3	4	[3]5	5
Three	Senior Operator				3	4
	Operator				5	6

[1]Temporary deviations from the numbers required by this table shall be in accordance with criteria established in the unit's technical specifications.
[2]For the purpose of this table, a nuclear power unit is considered to be operating when it is in a mode other than cold shutdown or refueling as defined by the unit's technical specifications.
[3]The number of required licensed personnel when the operating nuclear power units are controlled from a common control room are two senior operators and four operators.

(ii) Each licensee shall have at its site a person holding a senior operator license for all fueled units at the site who is assigned responsibility for overall plant operation at all times there is fuel in any unit. If a single senior operator does not hold a senior operator license on all fueled units at the site, then the licensee must have at the site two or more senior operators, who in combination are licensed as senior operators on all fueled units.

(iii) When a nuclear power unit is in an operational mode other than cold shutdown or refueling, as defined by the unit's technical specifications, each licensee shall have a person holding a senior operator license for the nuclear power unit in the control room at all times. In addition to this senior operator, for each fueled nuclear power unit, a licensed operator or senior operator shall be present at the controls at all times.

(iv) Each licensee shall have present, during alteration of the core of a nuclear power unit (including fuel loading or transfer), a person holding a senior operator license or a senior operator license limited to fuel handling to directly supervise the activity and, during this time, the licensee shall not assign other duties to this person.

(3) Licensees who cannot meet the January 1, 1984 deadline must submit by October 1, 1983 a request for an extension to the Director of the Office of Nuclear Regulation and demonstrate good cause for the request.

II. BACKGROUND

On September 23, 2013, ENO informed the NRC that it intended to permanently cease power operations at VY (Reference 2). Once the certifications required by 10 CFR 50.82(a)(1) have been submitted to the NRC, pursuant to 10 CFR 50.82(a)(2), the 10 CFR Part 50 license for VY will no longer authorize operation of the reactor or emplacement or retention of fuel in the reactor vessel.

On October 31, 2013, ENO submitted a LAR that would change the Renewed Facility Operating License (OL) and the Administrative Controls section of the TS to reflect the expected permanently defueled status of VY. The amendment request included proposed changes to TS 6.2.B, "Unit Staff," that would require a minimum shift crew composition of one CFH and one non-certified operator. The proposed LAR also included a requirement in TS 6.2.C that a CFH training program be maintained. On October 31, 2013, ENO submitted a request for NRC approval of a CFH Training Program (Reference 3).

10 CFR 50.54(m) specifies minimum on-site shift staffing requirements for operators licensed under 10 CFR 55, "Operators' Licenses." The scope of 10 CFR 55, states that the regulations of this part apply to any individual who manipulates the controls of any utilization facility licensed under 10 CFR Parts 50, 52, or 54. 10 CFR 55.3, "License Requirements," states, "A

person must be authorized by a license issued by the Commission to perform the function of an operator or a senior operator as defined in this part." In 10 CFR 55.4, "Definitions," an operator is defined as "any individual licensed under this part to manipulate a control of a facility." 10 CFR 55.4 also defines controls as "apparatus and mechanisms the manipulation of which directly affects the reactivity or power level of the reactor." Once the certifications required by 10 CFR 50.82(a)(1) have been submitted to the NRC, pursuant to 10 CFR 50.82(a)(2), the 10 CFR Part 50 license for VY will no longer authorize operation of the reactor or emplacement or retention of fuel in the reactor vessel. Therefore, VY will no longer require operators licensed under 10 CFR 55 because it no longer has any "controls" that affect the reactivity or power level of the reactor (as defined in 10 CFR 55.4, "Definitions").

Based on the above, ENO concludes that 10 CFR 50.54(m) will no longer be applicable to VY since 10 CFR 50.54(m) specifies staffing levels for operators licensed under 10 CFR 55 (which will no longer be necessary).

A. Licensed Operator Requirements for Nuclear Power Plants

10 CFR 50.54(m) specifies minimum requirements per shift for on-site staffing of nuclear power units by operators and senior operators licensed under 10 CFR Part 55. The requirements of 10 CFR 50.54(m) were published in the Federal Register on July 11, 1983 (Reference 4). The summary for this final rule stated that the regulation was promulgated:

> *"to require licensees of nuclear power units to provide a minimum number of licensed operators and senior operators on shift at all times to respond to normal and emergency conditions. These requirements will further assure the protection of the health and safety of the public by allowing the senior operator in charge the flexibility to move about the facility as needed while assuring that a senior operator is continuously present in the control room during unit operation."*

The background for this rule stated that the rule implemented the recommendations of the NRC Action Plan Developed as a Result of the TMI-2 Accident (which provided interim shift staffing criteria in NUREG-0737 to all licensees of operating units). The background section states:

> *"To ensure that all operating nuclear power units are adequately staffed with licensed personnel, the amendment will apply these NUREG-0737 criteria to all operating nuclear power units."*

In the mid-1990's, NRC proposed to amend the decommissioning regulations in 10 CFR Parts 2, 50, and 51 to clarify ambiguities (Reference 5). In that rulemaking justification for the 50.54(x) change which allowed certified fuel handlers in lieu of licensed operators, NRC stated that:

> *"A nuclear power reactor that has permanently ceased operations and no longer has fuel in the reactor vessel does not require a licensed individual to monitor core conditions."*

Although the rule does not explicitly exclude facilities that have submitted the certifications under Section 50.82(a)(1), both the basis and the rule itself are premised on "operating nuclear power units." In addition, SECY-00-0145, "Integrated Rulemaking Plan for Nuclear Power Plant Decommissioning" (Reference 7), discusses portions of 10 CFR 50.54 that contain licensed operator requirements with respect to decommissioning plants. The discussion in Section D of SECY-00-0145 (Staffing and Training) states the following:

> *"A decommissioning plant is clearly not 'operating' and no manipulation of controls that affect reactor reactivity or power can occur at a permanently defueled reactor. Therefore, the regulations that require specified licensed operator staffing for operating reactors are not applicable to a decommissioning plant."*

SECY-00-0145 recommended that the existing rule regarding licensed operator staffing at decommissioning facilities be clarified. The recommendation is as follows:

> *"Clarify that licensed operators are not required for permanently shutdown and defueled reactors."*

A report transmitted by NRC memorandum (Reference 8) regarding applicability of Title 10 of the Code of Federal Regulations to decommissioning nuclear power plants contains discussion regarding whether licensed operators are required for permanently shutdown and defueled facilities. The discussion states that while 10 CFR 50.54(m) is applicable to all licenses, "the applicability of this subsection appears to apply to plant operation." The memorandum also states that "once the fuel has been permanently removed from the reactor vessel, the applicability of this regulation becomes less apparent." The applicability of 10 CFR 50.54(m) is also addressed in the discussion regarding Part 55, "Operators' Licenses," which states, "the regulations of this part are deemed to be applicable to decommissioning plants as long as licensed operators are used by the decommissioning plant for staffing." This position is logical, in that the regulation governing licensed operators (Part 55) should remain applicable to facilities that rely on licensed operators. Conversely, once a facility no longer relies on licensed operators, Part 55 would no longer apply.

VY is a single unit facility. For a facility containing a single nuclear power unit that is not operating, the table in 10 CFR 50.54(m)(2)(i) requires one Senior operator and one operator on-site per shift, each of whom is licensed under 10 CFR Part 55. Once the certifications required by 10 CFR 50.82(a)(1) have been submitted to the NRC, pursuant to 10 CFR 50.82(a)(2), the 10 CFR Part 50 license for VY will no longer authorize operation of the reactor or emplacement or retention of fuel in the reactor vessel. Shift staffing with operators licensed under 10 CFR 55 will no longer be necessary to meet 10 CFR 50.54(m) requirements.

VY TS 6.2.B, "Unit Staff," currently contains administrative controls for shift crew composition that are consistent with the requirements of 10 CFR 50.54(m). VY submitted proposed changes to TS 6.2.B in Reference 1. The proposed changes would require a minimum shift crew composition of one CFH and one non-certified operator. Therefore, the number of required positions to be staffed will remain the same as specified in 10 CFR 50.54(m). Reference 1 also proposed changes to VY TS 6.2.C.2 that would require an NRC approved training and retraining program for CFHs be

maintained. VY submitted a CFH training program to NRC for review and approval on October 31, 2013 (Reference 3).

The proposed qualification requirements of the two administratively required individuals are commensurate with the scope of activities needed for safe management of irradiated fuel at a permanently defueled facility.

B. Summary

ENO is requesting a permanent exemption from the requirements of 10 CFR 50.54(m) for VY. The exemption would eliminate the requirement that on-site shifts be staffed with operators licensed under 10 CFR 55 and allow on-site shifts to be staffed with CFHs and non-certified operators. Once the certifications required by 10 CFR 50.82(a)(1) have been submitted to the NRC, pursuant to 10 CFR 50.82(a)(2), the 10 CFR Part 50 license for VY will no longer authorize operation of the reactor or emplacement or retention of fuel in the reactor vessel. As such, it will no longer be possible for any operator controls to directly affect the reactivity or power level of the reactor. Consequently, there will no longer be a requirement for operators licensed under 10 CFR 55 and consistent with 10 CFR 55.2, Part 55 will no longer apply to VY. VY has submitted an associated license amendment request that would incorporate minimum staffing requirements for CFHs into the VY TS. The proposed TS requirements will specify appropriate on-site shift manning and associated training requirements for VY.

C. Precedence

The proposed exemption is consistent with past treatment of other permanently defueled nuclear facilities in the U.S. (e.g., Millstone 1 and Zion). These facilities rely on administrative controls to establish on-site shift staffing requirements and the controls specify the use of CFHs and non-certified operators.

III. JUSTIFICATION FOR EXEMPTIONS AND SPECIAL CIRCUMSTANCES

10 CFR 50.12 states that the Commission may, upon application by any interested person or upon its own initiative, grant exemptions from the requirements of the regulations of Part 50 which are authorized by law, will not present an undue risk to the public health and safety, and are consistent with the defense and security. 10 CFR 50.12 also states that the Commission will not consider granting an exemption unless special circumstances are present. As discussed below, this exemption request satisfies the provisions of Section 50.12.

A. The exemptions are authorized by law

10 CFR 50.12 allows the NRC to grant exemptions from the requirements of 10 CFR Part 50. The proposed exemption would not result in a violation of the Atomic Energy Act of 1954, as amended, or the Commission's regulations. Therefore, the exemption is authorized by law.

B. The exemptions will not present an undue risk to public health and safety

A nuclear power reactor that has permanently ceased operations and no longer has fuel in the reactor vessel does not require a licensed individual to monitor core conditions. A CFH at a permanently shutdown and defueled nuclear power reactor undergoing decommissioning is an individual who has the requisite knowledge and experience to evaluate plant conditions and make the judgments necessary to take actions needed to protect the health and safety of the public. Requirements for minimum shift staffing and for maintaining an NRC-approved CFH training program will be contained in the VY TS.

Therefore, the exemption will not present an undue risk to the public health and safety.

C. The exemptions are consistent with the common defense and security

Required shift staffing numbers are not being reduced from that previously required by 10 CFR 50.54(m), only the requirement for the on-shift staff to be licensed pursuant to Part 55 is being eliminated. Requirements for minimum shift staffing and for maintaining an NRC approved CFH training program will be contained in the VY TS.

Eliminating the requirement that on-site shift personnel be licensed pursuant to 10 CFR 55 will not adversely affect ENO's ability to physically secure the site or protect special nuclear material. Physical security measures at VY are not affected by the requested exemption.

Therefore, the proposed exemption is consistent with the common defense and security.

D. Special Circumstances

Pursuant to 10 CFR 50.12(a)(2), the NRC will not consider granting an exemption to its regulations unless special circumstances are present. ENO believes that special circumstances are present as discussed below.

1. **Application of the regulation in the particular circumstances would not serve the underlying purpose of the rule or is not necessary to achieve the underlying purpose of the rule. (10 CFR 50.12(a)(2)(ii))**

   The underlying purpose of 10 CFR 50.54(m) is to ensure that operating nuclear power units are adequately staffed with licensed personnel. The requirements in 10 CFR 50.54(m) were developed in response to the TMI-2 accident taking into consideration the risks associated with operation of a nuclear power reactor at its licensed, full-power level. These risks include the potential for a reactor accident with offsite radiological dose consequences.

   VY will be a permanently defueled facility. Once defueled, the radiological consequences of accidents possible at VY will be substantially lower than those at an operating plant. Because of the significantly reduced consequences of possible radiological events, the scope of operator actions and corresponding requirements for operator staffing levels may be accordingly reduced. Thus, the underlying purpose of the regulations will continue to be met by use of CFHs and non-certified operators and eliminating the requirements that licensed operators fulfill on-site staffing requirements.

All necessary activities can be appropriately fulfilled by CFHs and non-certified operators.

Therefore, application of the requirements in 10 CFR 50.54(m) is not necessary to achieve the underlying purpose of this rule and special circumstances are present as defined in 10 CFR 50.12(a)(2)(ii).

2. **Compliance would result in undue hardship or other costs that are significantly in excess of those contemplated when the regulation was adopted, or that are significantly in excess of those incurred by others similarly situated. (10 CFR 50.12(a)(2)(iii))**

Compliance with the requirements in 10 CFR 50.54(m) would result in undue hardship and costs being incurred for the maintenance and implementation of a licensed operator training and qualification program. This program would be needed to maintain operators licensed under Part 55. Other licensees with permanently defueled plants, such as Zion and Millstone Unit 1, do not require operators licensed under Part 55 for shift staffing. The additional costs associated with maintaining a licensed operator training and qualification program would result in an unnecessary burden on the VY decommissioning trust fund.

Therefore, compliance with the rule would result in an undue hardship or other costs that are significantly in excess of those contemplated when the regulation was adopted, or that are significantly in excess of those incurred by others similarly situated. Therefore, the special circumstances are present as defined in 10 CFR 50.12(a)(2)(iii).

IV. ENVIRONMENTAL ASSESSMENT

The proposed exemption meets the eligibility criterion for categorical exclusion set forth in 10 CFR 51.22(c)(25), because the proposed exemption involves: (i) no significant hazards consideration; (ii) no significant change in the types or significant increase in the amounts of any effluents that may be released offsite; (iii) no significant increase in individual or cumulative public or occupational radiation exposure; (iv) no significant construction impact; (v) no significant increase in the potential for or consequences from radiological accidents; and (vi) the requirements from which the exemption is sought involve education, training, experience, qualification, requalification or other employment suitability requirements. Therefore, pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the proposed exemption.

(i) No Significant Hazards Consideration Determination

ENO has evaluated the proposed exemption to determine whether or not a significant hazards consideration is involved by focusing on the three standards set forth in 10 CFR 50.92 as discussed below:

1. Does the proposed exemption involve a significant increase in the probability or consequences of an accident previously evaluated?

The proposed exemption has no effect on plant systems, structures and components (SSCs) and no effect on the capability of any plant SSC to perform

its design function. The proposed exemption will not increase the likelihood of the malfunction of any plant SSC. The proposed exemption will have no effect on the probability of consequences of any of the previously evaluated accidents in the VY Updated Final Safety Analysis Report. Reliance on CFHs and non-certified operators to perform on-shift staffing duties will not affect the probability of occurrence of any previously analyzed accident.

Therefore, the proposed exemption does not involve a significant increase in the probability or consequences of an accident previously evaluated.

2. Does the proposed exemption create the possibility of a new or different kind of accident from any accident previously evaluated?

The proposed exemption does not involve a physical alteration of the plant. No new or different type of equipment will be installed and there are no physical modifications to existing equipment associated with the proposed exemption. Similarly, the proposed exemption will not physically change any SSCs involved in the mitigation of any accidents. Thus, no new initiators or precursors of a new or different kind of accident are created. Furthermore, the proposed exemption does not create the possibility of a new accident as a result of new failure modes associated with any equipment or personnel failures. No changes are being made to parameters within which the plant is normally operated, or in the setpoints which initiate protective or mitigative actions, and no new failure modes are being introduced.

Therefore, the proposed exemption does not create the possibility of a new or different kind of accident from any accident previously evaluated.

3. Do the proposed exemptions involve a significant reduction in a margin of safety?

The proposed exemption does not alter the design basis or any safety limits for the plant. The proposed exemption does not impact station operation or any plant SSC that is relied upon for accident mitigation.

Therefore, the proposed exemption does not involve a significant reduction in a margin of safety.

Based on the above, ENO concludes that the proposed exemption presents no significant hazards consideration, and, accordingly, a finding of "no significant hazards consideration" is justified.

(ii) There is no significant change in the types or significant increase in the amounts of any effluents that may be released offsite.

There are no expected changes in the types, characteristics, or quantities of effluents discharged to the environment associated with the proposed exemption. There are no materials or chemicals introduced into the plant that could affect the characteristics or types of effluents released offsite. In addition, the method of operation of waste processing systems will not be affected by the exemption. The proposed exemption will

not result in changes to the design basis requirements of SSCs that function to limit or monitor the release of effluents. All the SSCs associated with limiting the release of effluents will continue to be able to perform their functions. Therefore, the proposed exemption will result in no significant change to the types or significant increase in the amounts of any effluents that may be released offsite.

(iii) There is no significant increase in individual or cumulative public or occupational radiation exposure.

The exemption will result in no expected increases in individual or cumulative occupational radiation exposure on either the workforce or the public. There are no expected changes in normal occupational doses. Likewise, design basis accident dose is not impacted by the proposed exemption.

(iv) There is no significant construction impact.

No construction activities are associated with the proposed exemption.

(v) There is no significant increase in the potential for or consequences from radiological accidents.

See the no significant hazards considerations discussion in Item (i)(1) above.

(vi) The requirements from which exemptions are sought involve education, training, experience, qualification, requalification or other employment suitability requirements.

The underlying purpose of the requirements from which exemption is sought is to ensure that all operating nuclear power units are adequately staffed with licensed personnel. These are requirements that ensure appropriate training and staffing levels for plant operators.

References

1. Letter, Entergy Nuclear Operations, Inc. to USNRC "Technical Specifications Proposed Change No. 307, Revision to Mitigation Strategy License Condition and Technical Specification Administrative Controls for Permanently Defueled Condition," BVY 13-096, dated October 31, 2013
2. Letter, Entergy Nuclear Operations, Inc. to USNRC, "Notification of Permanent Cessation of Power Operations," BVY 13-079, dated September 23, 2013
3. Letter, Entergy Nuclear Operations, Inc. to USNRC "Vermont Yankee - Request for Approval of Certified Fuel Handler Training Program," BVY 13-095, dated October 31, 2013
4. Federal Register Notice, Vol. 48, No. 133 (48 FR 31611), Licensed Operator Staffing at Nuclear Power Units, dated July 11, 1983
5. Federal Register Notice, Vol. 60, No. 139 (60 FR 37374), Decommissioning of Nuclear Power Reactors, dated July 20, 1995
6. Federal Register Notice, Vol. 61, No. 146 (61 FR 39278), Decommissioning of Nuclear Power Reactors, dated July 29, 1996

7. Commission SECY Paper, SECY-00-0145, "Integrated Rulemaking Plan for Nuclear Power Plant Decommissioning," dated June 28, 2000
8. Memorandum from William C. Huffman (NRC), "Transmittal of Report on Determination of Applicability of Title 10 of the Code of Federal Regulations to Decommissioning Nuclear Power Plants," dated July 7, 2000