

EP Decommissioning Frequently Asked Questions – Industry / NRC Perspective

John Egdorf – Dominion Energy Kewaunee
Shift Manager - Certified Fuel Handler - Emergency Preparedness

Michael Norris - U.S. Nuclear Regulatory Commission
Operating Reactor Licensing Branch Team Leader
Division of Preparedness and Response

Emergency Preparedness Decommissioning Workshop
October 19-20, 2016 • Washington, DC • NEI Office Clean Air C



nuclear. clean air energy.

Background

10 CFR 50 Emergency Planning Regulations do not distinguish between an operating power plant and a decommissioned plant.

- Document Q & As
- Promote Consistency
- Capture Q & As for Lessons Learned
- Provide interpretation to bridge the regulation void allowing plants to proceed through the Permanently Defueled process



nuclear. clean air energy.

EPFAQ 2014-003



Question:

Is it appropriate to change emergency action levels (EALs) for Permanently Defueled (PD)-AU1 and PD-AA1 as follows?

PD-AU1: Revise the Initiating Condition (IC) to "An uncontrolled release of gaseous or liquid radioactivity for 60 minutes or longer. Also, revise EAL #1 to "Reading on any effluent radiation monitor that is greater than the reading shown for 60 minutes or longer."

PD-AA1: Revise the IC to "An uncontrolled release of gaseous or liquid radioactivity resulting in detectable levels at the site boundary."

Also, remove EALs #2 and #4, and revise EAL #3 to allow for licensees to consider alternatives to the guidance provided in Nuclear Energy Institute (NEI) 99-01, Revision 6.



nuclear. clean air energy.

EPFAQ 2014-003



NRC Response:

While the PD EALs listed in NEI 99-01, Revision 6, are acceptable, licensees may consider the attached PD EALs when developing EALs applicable to PD reactors, (i.e., with fuel in the spent fuel pool and not in the reactor vessel). This is considered a DIFFERENCE in accordance with Regulatory Issue Summary 2003-18, with Supplements 1 and 2 (Reference #3).

The regulatory process for licensees to follow when making emergency plan changes is Title 10 of the *Code of Federal Regulations (10 CFR) paragraph 50.54(q)*. In accordance with this regulation, licensees are responsible for the evaluation of a proposed change and a determination as to whether the change results in a reduction in the effectiveness of the emergency plan. As a result of this determination, the licensee will either implement the change or submit it to the NRC for staff approval prior to implementation. The information provided by this EPFAQ does not relieve a licensee of the obligation to comply with the requirements of 10 CFR 50.54(q). In the interest of clarity, the staff notes that a licensee:

- May reference this EPFAQ as a change initiator but not as the justification making a change to their emergency plan;
- Must evaluate the impact of the revised EAL on their existing, approved emergency classification scheme;
- Must determine if the changed EAL would reduce the effectiveness of their emergency plan using the guidance provided in Regulatory Guide 1.219 (Reference #4); and
- Should reference 10 CFR Part 50 Appendix E, Section IV.B.2 as the regulatory basis for submitting an LAR to revise an entire EAL scheme.



nuclear. clean air energy.

EPFAQ 2014-004**Question:**

Since the emergency preparedness function associated with the fire brigade will be maintained by meeting 10 CFR 50.48 objectives for a decommissioned site, can the changes to the fire protection plan associated with brigade staffing and offsite fire protection support also be reflected in the emergency plan without NRC preapproval using the 10CFR 50.54(q) process?



nuclear. clean air energy.

EPFAQ 2014-004**Background:**

Language in 10 CFR 50.48(f) allows changes to a Fire Protection Plan for licensees that have submitted the certification required under 10 CFR 50.82(a)(1). Specifically, 10 CFR 50.48(f)(3) states:

"The licensee may make changes to the fire protection program without NRC approval if these changes do not reduce the effectiveness of fire protection for facilities, systems, and equipment that could result in a radiological hazard, taking into account the decommissioning plant conditions and activities."



Within the 10 CFR 50.48 regulation, decommissioning plants are allowed to re-evaluate the fire protection plan and when justified by the remaining potential fire induced radiological hazards change the fire brigade from a five member advanced exterior or interior structural brigade to a three member incipient fire brigade. Based upon the evaluation, offsite fire protection support may be modified to ensure the three 10 CFR 50.48(f) objectives, listed below, continue to be met.

1. Reasonably prevent fires;
2. Rapidly detect, control, and extinguish fires that could result in a radiological hazard; and
3. Minimize the risk of fire-induced radiological hazards to the public

Since the firefighting function is maintained, the brigade changes in question would conform to 10 CFR 50.48 and not challenge safety for decommissioned plants that have received Cessation of Operation Letters.



nuclear. clean air energy.

EPFAQ 2014-004

Proposed Solution:

As long as the emergency preparedness firefighting functional task is retained and all other emergency plan functions that had been performed by the two eliminated positions are retained without a reduction in effectiveness (evaluated against on-shift staffing study), the 10CFR50.54(q) process should enable conforming changes to the emergency plan based on fire protection plan changes to be administratively made, without NRC prior approval.

Examples of these specific changes if contained in the emergency plan include:

- Onsite Staffing Levels,
- Off-site response,
- Fire brigade composition.



nuclear. clean air energy.

EPFAQ 2014-004

NRC Response:

Licensee-specific Fire Protection Programs are developed and maintained in accordance with 10 CFR 50.48. Sections (f)(2) and (f)(3) are as follows, emphasis added:

(2) The licensee shall assess the fire protection program on a regular basis. The licensee shall revise the plan as appropriate throughout the various stages of facility decommissioning.

(3) The licensee may make changes to the fire protection program without NRC approval if these changes do not reduce the effectiveness of fire protection for facilities, systems, and equipment that could result in a radiological hazard, taking into account the decommissioning plant conditions and activities.

10 CFR 50.54(q) is not applicable when licensees are considering revising their Fire Protection Program per 10 CFR 50.48, up to and including decommissioning. 10 CFR 50.54(q) applies only when emergency preparedness (EP) function(s) are assigned to staff already tasked with Fire Protection Program elements. In other words, if the change(s) made to the Fire Protection Program change the assignment of EP functions, then a 10 CFR 50.54(q) evaluation must be performed. If no changes are made to the assignment of EP functions, then a 10 CFR 50.54(q) evaluation is not required, even if an emergency plan staffing table is changed to reflect the revised Fire Protection Program staffing or response.



nuclear. clean air energy.

EPFAQ 2014-005

Question:

Does ERDS need to be maintained by a licensee that has submitted certification confirming cessation of operation and removal of fuel from the reactor vessel (Ref 10 C.F.R. 50.82)?



nuclear. clean air energy.

EPFAQ 2014-005

Background:

Relevant language on activation of Emergency Response Data System (ERD) in the 10 CFR 50.72(a)(4) states:

“The licensee shall activate the Emergency Response Data System (ERDS) as soon as possible but not later than one hour after declaring an Emergency Class of alert, site area emergency, or general emergency. The ERDS may also be activated by the licensee during emergency drills or exercises if the licensee's computer system has the capability to transmit the exercise data.”

10 CFR 50 Appendix E section VI, Emergency Response Data System, states:

“2. Except for Big Rock Point and all nuclear power facilities that are shut down permanently or indefinitely, onsite hardware shall be provided at each unit by the licensee to interface with the NRC receiving system. Software, which will be made available by the NRC, will assemble the data to be



nuclear. clean air energy.

EPFAQ 2014-005

Proposed Solution:

Since 10CFR50 Appendix E Section VI exempts permanently shut down facilities from maintaining the hardware and software for transmitting ERDS, once a licensee submits certification confirming cessation of operation and removal of fuel from the reactor vessel (Ref 10 C.F.R. 50.82), ERDS activation requirements no longer apply.



nuclear. clean air energy.

EPFAQ 2014-005

NRC Response:

Rejected: NRC Memorandum from the Director, Division of Preparedness and Response (NSIR) to Regions (Division of Reactor Projects) is pending which is intended to clarify the requirements for maintenance and use of the Emergency Response Data System (ERDS) by licensees who have submitted certification of permanent cessation of operations pursuant to Section 50.82, "Termination of Licenses," in Part 50, "Domestic Licensing of Production and Utilization Facilities," of Title 10 of the Code of Federal Regulations, (10 CFR Part 50). This memorandum will be declared as publicly available in ADAMS (ML14099A520) when approved by DPR Director and available to licensees for use in addressing this proposed EPFAQ.



nuclear. clean air energy.

EPFAQ 2014-006

Question:

Is it permissible for a licensee that has submitted certification confirming cessation of operation and removal of fuel from the reactor vessel to use its equipment abandonment procedures and processes to permanently remove from service the emergency preparedness equipment which is not required to support permanently defueled accident scenarios? The licensee is no longer authorized to operate the reactor or place fuel into the reactor vessel (Ref. 10 C.F.R. 50.82).



nuclear. clean air energy.

EPFAQ 2014-006

Background:

NRC staff provided verbal guidance that, until a station receives approval of the Permanently Defuel Emergency Plan (PDEP), the only vehicle available to licensees is to use the station configuration control processes (equipment out-of-service programs, equipment checklist, etc.) to temporarily remove from service the emergency preparedness equipment which is not required to support permanently defueled accident scenarios.

This situation causes the station to defer workload and retain personnel to complete, after approval of the PDEP, the equipment abandonment process.



nuclear. clean air energy.

EPFAQ 2014-006

Proposed Solution:

Once the licensee has submitted certification confirming cessation of operation and removal of fuel from the reactor vessel and an analysis is performed to determine the permanently defueled accident scenarios, the equipment abandonment procedures and processes may be employed to permanently remove from service the emergency preparedness equipment which is not required to support permanently defueled accident scenarios.



nuclear. clean air energy.

EPFAQ 2014-006

NRC Response:

Rejected: Issue is outside of EPFAQ process since it does not relate directly to NRC issued or endorsed EP guidance. NSIR is proposing to take this to our NRC Decommissioning Transition Working Group for discuss and possible options for providing clarification to licensees.



nuclear. clean air energy.

EPFAQ 2014-007

Question:

A nuclear power reactor licensee that certifies cessation of operation and removal of fuel from the reactor vessel in accordance with Title 10 of the *Code of Federal Regulations* paragraph 50.82(a)(1), submits a permanently defueled (PD) emergency action level (EAL) scheme for U.S. Nuclear Regulatory Commission (NRC) pre-approval. In the period between when the scheme is submitted and approval of the EAL scheme is received from the NRC, may the licensee eliminate from its scheme EAL statements and fission product barrier status thresholds that are no longer applicable to the station?



nuclear. clean air energy.

EPFAQ 2014-007

Background:

Federal regulations require that a nuclear power plant operator develop a scheme for the classification of emergency events and conditions. This scheme provides the defined thresholds that will allow site personnel to rapidly implement a range of pre-planned emergency response measures. This scheme contains a set of generic initiating conditions, EALs, and fission product barrier status thresholds.



nuclear. clean air energy.

EPFAQ 2014-007

Proposed Solution:

The NRC provided verbal guidance that the licensee may not eliminate from its scheme the EALs statements and fission product barrier status thresholds, despite the fact that these are no longer applicable to a permanently defueled station. However, the NRC did state the licensee may indicate certain EALs statements and fission product barrier status thresholds that are no longer applicable. It is acceptable to shade (or otherwise highlight) EALs and fission product barrier thresholds that are no longer applicable.



nuclear. clean air energy.

EPFAQ 2014-007

NRC Response:

Licensees are required to be able to implement the EALs as approved by the NRC until the EAL scheme has been approved for PD EALs. However, the staff recognizes that all of the EALs associated with operating modes applicable to an operating unit (power operation startup, hot standby, etc.) will not be applicable as these operating modes would not be reached after the certification of cessation of operations and removal of fuel from the reactor vessel.

Nevertheless, the approved EAL scheme must be maintained and available until the PD EAL scheme is approved. If a licensee chooses to revise an operator aid so that focus is maintained on EALs applicable in the cold operating modes, or removes focus on those EALs applicable in the hot operating modes, using various human factoring methods (i.e., lightly shading or highlighting), then the EAL scheme as a whole continues to be maintained consistent with regulatory requirements.



nuclear. clean air energy.

EPFAQ 2014-008

Question:

May a licensee that has submitted certification confirming cessation of operation and removal of fuel from the reactor vessel (Ref. 10 C.F.R. 50.82) remove certain emergency plan implementing procedure (EPIP) statements/process/steps/actions that do not implement programmatic elements described in the emergency plan?



nuclear. clean air energy.

EPFAQ 2014-008

Background:

The emergency plan identifies and describes programmatic methods necessary for maintaining emergency preparedness and responding to emergencies. These methods are known as program elements and they characterize implementation aspects of the planning standards in 10 CFR 50.47(b). They also relate to requirements in Appendix E to 10 CFR Part 50 and generally correspond to the evaluation criteria of NUREG-0654 or approved alternatives that provide specific acceptable methods for complying with the planning standards in 10 CFR 50.47(b) and the requirements in Appendix E to 10 CFR Part 50. Such programmatic documents are subject to the 10 CFR 50.54(q) change process.

EPIPs may describe processes:

- That implement programmatic elements described in the emergency plan,
- That do not implement programmatic elements described in the emergency plan.

For example, the emergency plan may specify the minimum staffing requirements of an emergency response facility. The EPIP describes the positions that comprise minimum staffing and how their duties are carried out. The EPIP may also include other staff positions and respective duties that are not described in the emergency plan. Once the NRC docket the licensee's certifications confirming cessation of operation and removal of fuel from the reactor vessel, the licensee is no longer authorized to operate the reactor or place fuel into the reactor vessel (Ref 10 C.F.R. 50.82). The emergency planning demands of defueled plants are logically and should be substantially different from the operating plants. In such cases, the station may determine the staff not listed in the emergency plan may no longer be needed and the requirement for the staff removed from the EPIP.



nuclear. clean air energy.

EPFAQ 2014-008

Proposed Solution:

Licensee may remove statements/processes/steps/actions in EIPs that do not implement programmatic elements of the emergency plan. This change can be made outside the 50.54(q)(3) process.



nuclear. clean air energy.

EPFAQ 2014-008

NRC Response:

Section 3.5, "Emergency Plan," of Regulatory Guide (RG) 1.219, "Guidance on Making Changes to Emergency Plans for Nuclear Power Reactors," discusses what constitutes the "emergency plan" as defined in 10 CFR 50.54(q)(1)(ii). As stated in Section 3.5.c, subtier documents such as EIPs are generally not considered to be part of the emergency plan and are not subject to the change process of 10 CFR 50.54(q)(3). However, if the EIP does contain programmatic descriptions not included in the emergency plan, then the 10 CFR 50.54(q)(3) change process applies to the EIP. Programmatic descriptions (e.g., staffing levels, Emergency Action Level (EAL) schemes, descriptions of resources, capabilities and methods, etc.) demonstrate how the licensee complies with the applicable regulatory Rev 1 (6.9.2014) requirements. Consistent with RG 1.219, EIP content that provides *methods for implementing* the programmatic descriptions (e.g., step-by-step instructions, data sheets and forms for documenting the activity, training rosters, etc.), rather than programmatic descriptions, may be removed by the licensee outside of the 10 CFR 50.54(q)(3) change process. The remaining EIP content must effectively support the programmatic descriptions in the emergency plan if the Emergency Response Organization is to successfully perform these activities.



nuclear. clean air energy.

EPFAQ 2014-009**Question:**

NEI 99-01, Development of Emergency Action Levels for Non-Passive Reactors, Revision 6 presents generic Initiating Conditions (ICs) and EALs in Appendix C, Permanently Defueled Station ICs/EALs. The NRC has concluded in previous exemption requests for facilities submitting certifications confirming cessation of operation and removal of fuel from the reactor vessel (Ref 10 C.F.R. 50.82) that they are not facilities that fall within the definition of "hostile action." Therefore, should facilities submitting certifications confirming cessation of operation and removal of fuel from the reactor vessel include the PD-HA1 EAL in the EAL scheme for an ISFSI only emergency plan and an emergency plan used during the period of time transitioning to an ISFSI?



nuclear. clean air energy.

EPFAQ 2014-009**Background:**

The Emergency Preparedness Final Rule, which was published in the Federal Register (76 FR 72560; November 23, 2011), amended certain requirements in 10 CFR Part 50. Among the changes, the definition of "hostile action" was defined as an act directed toward a nuclear power plant or its personnel that includes the use of violent force to destroy equipment, take hostages, and/or intimidate the licensee to achieve an end. This includes attack by air, land, or water using guns, explosives, projectiles, vehicles, or other devices used to deliver destructive force.

This definition was based on the definition of "hostile action" provided in NRC Bulletin 2005-02. That particular bulletin was not applicable to nuclear power reactors that have permanently ceased operations and have certified that fuel has been removed from the reactor vessel. Per NSIR/DRP-ISG-01, Emergency Planning for Nuclear Power Plants:

"The final rule requires nuclear power reactor licensees to ensure that adequate resources are identified to respond to the site during hostile action. Because "hostile action" is defined as "an act directed toward a nuclear power plant or its personnel," the NRC has excluded non-power reactors from the definition of "hostile action" at this time until a regulatory basis is developed to support inclusion of non-power reactors in that definition. However, non-power reactor licensees are still required to identify ORO resources that would respond to the facility in an emergency and the assistance licensees expect from them."



nuclear. clean air energy.

EPFAQ 2014-009

Proposed Solution:

A nuclear power reactor that has permanently ceased operations and has certified that fuel has been removed from the reactor vessel is not a facility that falls within the definition of "hostile action" and therefore need not include PD-HA1 in the decommissioned EAL scheme.



nuclear. clean air energy.

EPFAQ 2014-009

NRC Response:

Thank you for your recent submission of EPFAQ No. 2014-009 regarding clarifying the applicability of Initiating Condition PD-HA1 in the EAL decommissioning scheme, specifically in relation to definition of a "hostile action." NSIR/DPR has performed a review of the proposed EPFAQ No. 2014-009 and as a result this EPFAQ has been rejected due to the upcoming issuance of NSIR/DPR-ISG-02, "Interim Staff Guidance Emergency Planning Exemption Requests for Decommissioning Nuclear Power Plants." NSIR/DPRISG- 02 will provide programmatic information related to decommissioning plants and will address this issue.



nuclear. clean air energy.

Questions



John Egdorf
920-388-8733
john.r.egdorf@dom.com

Mike Norris
301-287-3754
Michael.Norris@nrc.gov