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NextEra Emergency Plan License Amendment

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Agenda

- **LAR Background**
- **Technical Basis**
- **Additional Information Needed Regarding Justification/Validation of Staffing Issues**
- **Additional Information/Clarification/Validation Needed**
- **Path Forward**

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Background

- The staff conducted public meetings on 2/16/22 (ML22032A172) and 5/18/22 (ML22124A218)
- Application was received on 10/4/22 (ML22278A031)
- Application was not accepted, needs supplemental information 11/22/22 (ML22311A558)
- Supplemental information received 12/9/22 (ML22343A254)
- Application was accepted 12/22/22 (ML22339A001)
- Request for additional information was sent 6/22/23 (ML23173A152)
- Partial RAI response was received on 8/7/23 (ML23219A102)
- Audit was conducted on 9/27-28/23 (ML23201A087)
- Supplement was received 11/28/23 (ML23332A005)

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Emergency Response Organization (ERO) Guidance in Support of 10 CFR 50.47(b)(2)

- RIS 2016-10, "License Amendment Requests for Changes to ERO Staffing and Augmentation"

  [ADAMS Accession No. ML16124A002]

  - Clarifies use of NEI 10-05 (On-Shift Staffing Analysis)
  - Staff evaluation against Table B-1 (NUREG-0654, Revision 1)
- Revised NUREG-0654 Table B-1 / Technical Basis
  - Issues by letter dated June 12, 2018, "Alternative Guidance for Licensee EROs"

    [ADAMS Accession Nos. ML18022A352 / ML16117A427]
- NUREG-0654, Revision 2
  - Issued December 2019

    [ADAMS Accession No. ML19347D139]

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ERO Staffing / Augmentation

- Table B-1 (functions/augmentation times) is intended to provide a model to consider in developing a site-specific emergency plan.
- Emergency plan should describe the minimum ERO staffing plan
  - Supporting EPIPs can describe any other staff response desired, as long as this staff is not critical to effective emergency plan implementation.

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Additional Information Needed Regarding Justification/Validation of Staffing Issues

The following slides describes the application and supplemental RAI responses that need additional justification or validation for the NRC staff to find acceptable.

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Command and Control Function

- Provide overall ERO command and control, until relieved.
- Approve emergency action level (EAL) and/or Protective Action Recommendation classifications, until relieved.
- Authorize personnel dose extensions, until relieved.

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Command and Control Function

Performed by the Shift Manager for the first 60 minutes following the declaration of an Alert or higher classification level.

- As time progresses after declaration, so does the workload of the on-shift emergency director.
- Studies show when a large number of tasks are required to be performed in parallel an operator may adopt a strategy of ignoring tasks that appear to be not critical at the moment (e.g., NUREG/CR-7190).
- Studies also show that leadership is crucial to effective and safe team performance.

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NRC technical justification for extending 60-Minute ERO augmentation times to 90 Minutes

A licensee requesting a change in staff augmentation requirements that would have the lead manager unavailable to assume command and control within 60 minutes of the initial emergency declaration ***should show that the on-shift staff includes enough qualified supervision such that one supervisor will assume the emergency director role.***

The licensee should show that the on-shift supervisor performing the manager actions will not have any additional duties (***e.g., each unit under the direction of a unit supervisor, a shift manager providing oversight of the plant response, and a designated emergency director responsible for emergency plan implementation***).

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The technical basis for the revised Table B-1

This function is important for effective emergency response because adequate command and control enables a licensee to effectively develop priorities for response planning and corrective action(s) and ***to provide a unified approach to the event response by providing a single individual with overall command and control authority.***

This function is also consistent with the Incident Command portion of the National Incident Management System (NIMS), dated December 2008. It should be staffed and maintained at all times. This function is typically assigned to the Operations Shift Manager (OSM). ***The augmentation (relief) of this position is intended to relieve the OSM of EP functions so that the OSM can focus on the event response from an operations perspective.***

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NextEra Request

- The NextEra supplements state that within 60-minutes of an Alert or higher declared emergency, a qualified Site Emergency Director (SEO) will be in contact with the Shift Manager / Emergency Director (SM/ED) to remotely to assist in Command and Control. (RAIs 1, 2)

Shift Manager Responsibilities

- Organizational Interface and Coordination
- Command and Control
- Facility/Group Management and Supervision
- Contact and Use of External Support Services
- Use of Medical, Fire and Law Enforcement Support
- NRC Notification and Communications
- Event Classification
- ERO Notification
- State and Local Event Notification
- ERF Communications
- Accident Detection and Assessment
- Effluent Release and Dose Assessment
- OSC Team Priorities, Dispatch and Control
- Site Assembly and Accountability
- Site Evacuation
- ERO Radiological Protection
- Offsite Protective Action Recommendations
- Emergency Exposure
- First Aid
- Event Termination

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Conclusion

Shift Manager only has a remote response at 60 minutes. The use of a remote responder performing the command-and-control functions has not been validated by the licensee and is not consistent with the current industry initiative for remote ERO augmentation. *The application did not provide sufficient justification that supports a finding of timely augmentation of response capabilities is available.*

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Radiation Protection Function

Radiation protection personnel perform multiple roles during normal and emergency plant operations. These roles include access control, personnel monitoring, dosimetry, and radiation protection coverage for repair and corrective actions, search and rescue, first aid, and firefighting during emergency response operations.

RIS-2016-10 Describes Differences Between Fully Qualified and Meter Qualified

NRC technical justification for extending 60-Minute ERO augmentation times to 90 Minutes

Personnel assigned to perform this function should be **fully qualified HP technicians** as described in **ANSI/ANS-3.1-1993**, "Selection, Qualification, and Training of Personnel for Nuclear Power Plants," that was approved for use by Regulatory Guide 1.8, "Qualification and Training of Personnel for Nuclear Power Plants." Personnel who are typically trained to a level of **"meter qualified"** to perform basic HP duties are not trained or do not have the necessary experience to perform complex HP duties, as discussed in HPPOS-0238, that would be necessary in a radiological emergency. For example:

(1) Typically, the training does not include providing HP coverage for other personnel.
(2) Radiation protection is not normally incorporated into normal job duties.
(3) Radiological conditions during an emergency may be unknown or rapidly changing.

RIS-2016-10 Describes Differences Between Fully Qualified and Meter Qualified

Technical justification for extending 60-Minute ERO augmentation times to 90 Minutes (continued)

The following Emergency Plan functions would constitute in-plant protective actions, which would require a fully qualified HP technician:

- Provide guidance for personnel protection to assist in minimizing personnel exposure.
- Provide guidance for exposure authorizations, dose guidelines, and post-exposure assessments.
- Provide job coverage for in-plant repair and corrective actions, and operations support, under changing radiological conditions.
- Provide guidance for emergency decontamination of personnel, equipment, and facilities.
- Provide guidance for personnel contamination control and respiratory protection.

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The technical basis for the revised Table B-1

The ability to provide radiological expertise when the plant is experiencing an event with serious radiological consequences is crucial, due to the unknown radiological environment faced by emergency workers, particularly at the onset of the event. This function should be staffed by 2 qualified RP staff members on-shift (or 1 per unit for multi-unit sites). These staff members should not have any collateral duties during emergency response.

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NextEra Request

- NextEra proposes to use Radiation Protection Operator (RP-Ops) staffing for on shift and augmented positions. (RAIs 9, 10, 11, 12, 15)

- Current staffing of on shift RP personnel
  - Point Beach – 2 RP Technicians
  - St. Lucie – 2 RP Technicians
  - Seabrook – 1 RP Technician
  - Turkey Point – 1 RP Technician

NOTE: the ANSI standard requires 6000 hours of documented HP experience for a **fully qualified technician**. By contrast, **a junior HP technician** can have only training and no documented experience.

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Conclusion

The supplements provide that this is not a fully qualified Radiation Protection position. This is not in accordance with NRC guidance nor past precedent. *The application did not provide sufficient justification that supports a finding of adequate staffing to provide initial facility accident response in key functional areas and timely augmentation of response capabilities is available.*

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Supervision of Radiation Protection Function

- Evaluate and assess plant and offsite radiological data in the development of onsite protective actions and offsite PARs, until relieved.
- Recommend onsite protective actions and offsite PARs to the applicable decisionmaker, until relieved.
- Direct all radiation protection activities, including field monitoring team (FMT) direction, until relieved.
- Provide relevant information to applicable communicators who are communicating offsite PARs to OROs, until relieved.

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The technical basis for the revised Table B-1

This function is important for effective emergency response to a radiological event because the management of RP resources, and the assistance this position provides the Emergency Coordinator, is crucial for response to radiological events. Radiological events can be very significant and constantly evolving and require significant expertise in radiation and radiological consequences. The evaluation of radiological events, and the development of effective protective action recommendations, requires this expertise to support the Emergency Coordinator in making these decisions. This position is also responsible for the direction and protection of FMTs.

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NextEra Request

The supplements state that the “interim” RP Coordinator (TSC) or RP Supervisor (OSC) are remotely responding to the SM/ED within 60 minutes. (RAIs 17,18)

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Conclusion

There is no discussion on how this was validated as well as it is not consistent with the current industry initiative for remote ERO augmentation, therefore the LAR has not provided information sufficient for the NRC to justify the proposed change. *The application did not provide sufficient justification that supports a finding of timely augmentation of response capabilities is available.*

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Repair Team Activities Function

- One electrician and one mechanic are required to provide augmentation within 60 minutes and an I&C technician providing augmentation within 90 minutes of an Alert or higher classification level.

  - Even if the above maintenance personnel cannot promptly restore the ECCS function, they will begin the maintenance process by gathering appropriate information to support prompt troubleshooting or repair.

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Technical justification for extending 60-Minute ERO augmentation times to 90 Minutes

Repair and Corrective Actions

To adequately support an extension of the response time for these responders, the licensee should demonstrate that the ***responsibilities of these positions can be covered with on-shift staff or earlier responders.***

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The technical basis for the revised Table B-1

From an EP perspective, the ability to get emergency core cooling system (ECCS) equipment operational was the primary basis for necessitating maintenance expertise while on-shift. Maintenance staff expertise may be advantageous for licensees to consider for other reasons, and at their discretion; however, for the purposes of NUREG-0654/FEMA-REP-1, ***the only area where maintenance availability should typically be necessary on-shift is for ECCS issues***. However, a licensee's ECCS is designed to be redundant and diverse such that common mode failures are very unlikely. As a result, the need to accommodate maintenance functionality on-shift is unnecessary. ***Nevertheless, a minimum number of maintenance personnel should respond to an event as part of the ERO, with more personnel available on an as-needed basis depending on the event. The augmentation (support) of the electrician and mechanic positions should occur within 60-minutes of an Alert ECL, (or greater), and is typically staffed in the OSC.***

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NextEra Request

The supplements do not provide augmenting electrical and mechanical maintenance technicians at 60 minutes. (RAI 26).

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Conclusion

LAR has not provided information sufficient for the NRC to justify the proposed extension in timing of augmenting electrical and mechanical maintenance technicians from 60 minutes to 90 minutes. *The application did not provide sufficient justification that supports a finding of timely augmentation of response capabilities is available.*

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On-site and Off-site Field Monitoring Function

- Per the guidance of NUREG-0654, Table B-1, there should be four augmented responders at 60 minutes—two for off-site surveys, one for on-site surveys, and one for in-plant surveys.

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Technical justification for extending 60-Minute ERO augmentation times to 90 Minutes

Off-site Surveys / On-site (out-of-plant) / In-Plant Surveys

To adequately support an extension of these responders to 90 minutes, the licensee should show that the on-shift HP staffing includes a minimum of four HP technicians in total for the site.

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The technical basis for the revised Table B-1

The ability to locate, monitor, and track a radioactive plume is important to ensure appropriate protective measures are taken in response to a radiological event. The ability to staff these teams before they may be needed (i.e., before a radiological release) greatly enhances the ability of the licensee to provide timely and accurate PARs.

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NextEra Request

The proposed NextEra Common Emergency Plan states that onsite field monitoring will be performed by the available Radiation Protection on shift positions or non-licensed operators. (RAIs 28, 30)

Conclusion

LAR does not provide the capability to perform on-site and off-site field monitoring within 60 minutes of an alert or higher declaration. *The application did not provide sufficient justification that supports a finding of adequate staffing to provide initial facility accident response in key functional areas and timely augmentation of response capabilities is available.*

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Additional Information/Clarification/Validation Needed

The following slides describes the application and supplemental RAI responses that need additional information, clarification or validation for the NRC staff to find acceptable.

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Additional Information/Validation Needed

Requested Change: NextEra is proposing to have an Emergency Classification Advisor (ECA) on shift and is using of an extra senior reactor operator (SRO) on shift. (RAIs 5, 6, 23, 24, 40)

Staff's finding: However, there is no indication that there is an extra SRO on shift and this has not been validated on how it would work at PSL (2 control rooms) and SBK (single unit). The application did not provide sufficient justification that supports a finding of adequate staffing to provide initial facility accident response in key functional areas is available.

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Additional Information/Validation Needed

Requested Change: The supplements state that the ECA is the designated communicator in addition to second checking Emergency Classification Level (ECL) determinations and Protective Action Recommendations (PARs) developed by the Shift Manager and supporting offsite response organization notification information accuracy. (RAI 4)

Staff's finding: It is not clear to the staff how the on-shift ECA is able to do all of the task that could be potentially assigned, classification, communications, dose assessment, supervision of engineering resources. Additionally, the applications did not describe how this would be accomplished using an extra SRO for PSL (2 control rooms) and SB, nor how it was validated. The application did not provide sufficient justification that supports a finding of adequate staffing to provide initial facility accident response in key functional areas is available.

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Additional Information/Validation Needed

Requested Change: The supplements state that there is a dedicated on-shift individual available to perform the dose assessment function. Additionally, the RAI response indicated that the on-shift Dose Assessor can perform collateral duties such as communications and radiological surveys if the collateral duties do not interfere or inhibit the performance of the dose assessment function. RAIs 19, 20. 21)

Staff's finding: The NRC staff could not determine if there was sufficient on-shift capability to perform the dose assessment function and how the collateral duties could interfere with the performance of the dose assessment or other emergency plan functions. The application did not provide sufficient justification that supports a finding of adequate staffing to provide initial facility accident response in key functional areas is available.

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Additional Information/Validation Needed

Requested Change: Response to RAI 26 states in part, engineering staff and FIN [Fix It Now] Supervisor will remotely report to the SM/ED within 60 minutes and start the development of the troubleshooting plan.

Staff's finding: This has not been validated for the FIN Supervisor and is not consistent with the current industry initiative for remote ERO augmentation. The application did not provide sufficient justification that supports a finding of timely augmentation of response capabilities is available.

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Additional Information/Validation Needed

Requested Change: Response to RAI 36 states in part, “NextEra Energy does not intend for any risk significant functions to be performed remotely. Classification of events, PAR development, and assessment of offsite dose will not be completed remotely.” (RAIs 33, 34,35, 36, 41)

Staff’s finding: However, the remote ED and remote TSC RP Coordinator have PAR development or recommendations as a responsibility. *The application did not provide sufficient justification that supports a finding of timely augmentation of response capabilities is available.*

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Additional Information/Validation Needed

Requested Change: Response to RAI 42 states in part, that it eliminated figure B.4 that identifies the interfaces between NextEra ERFs, NRC, OROs, and local support organizations.

Staff's finding: However, if the diagram is simply eliminated, NextEra would then have to describe the interfaces to meet B.4 not just delete the figure. The application did not provide sufficient justification that supports a finding that State and local organizations within the Emergency Planning Zones have been assigned, the emergency responsibilities of the various supporting organizations have been specifically established, and each principal response organization has staff to respond.

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Additional Information/Validation Needed

Requested Change: The proposed NextEra Common Emergency Plan states, detailed information on the FEMA approved system used to alert and notify the general public is maintained in site specific Alert and Notification System Design Report. (RAI 45)

Staff's finding: Provide additional information that meets Evaluation Criteria E.2 related to the alert and notification systems. This should include description of primary and backup methods, and the organizations or titles/positions responsible for activating the system. The application did not provide sufficient justification that supports a finding that prompt notification of the public and for public evacuation or other protective measures, should they become necessary, shall be described.

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Additional Information/Validation Needed

Requested Change: The supplements state that the NextEra Energy existing emergency plans are not wholly committed to NUREG-0696 and the Common Emergency Plan is written to not commit to NUREG-0696. The current TSC, EOF, and alternate facilities were evaluated as part of Analysis Report #4 for each site and noted therein that "no added, removed or altered commitments, or change of intent" nonreduction in effectiveness was noted. (RAI 48)

Staff's finding: Provide site-specific details for the Technical Support Centers in the site-specific annexes of the functional criteria in NUREG-0696 (i.e., function, size, structure, habitability, and instrumentation, data system equipment and power supplies). The application did not provide sufficient justification that supports a finding that adequate emergency facilities to support the emergency response are provided.

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Additional Information/Validation Needed

Requested Change: The supplements state that the NextEra Energy existing emergency plans are not wholly committed to NUREG-0696 and the Common Emergency Plan is written to not commit to NUREG-0696. The current TSC, EOF, and alternate facilities were evaluated as part of Analysis Report #4 for each site and noted therein that "no added, removed or altered commitments, or change of intent" nonreduction in effectiveness was noted. (RAI 49)

Staff's finding: Provide site-specific details for the Emergency Operations Facilities in the site-specific annexes of the functional criteria in NUREG-0696 (i.e., function, size, structure, habitability, and instrumentation, data system equipment and power supplies). The application did not provide sufficient justification that supports a finding that adequate emergency facilities to support the emergency response are provided.

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Additional Information/Validation Needed

Requested Change: The supplements state that as [evaluation criteria] N.4.b is not a licensee commitment, this activity will not be covered under the NextEra Energy Common Emergency Plan. The provisions for hospitals and ambulance services to participate in the Emergency Medical Drill from N.4.a will be based upon 42 CFR 482.15 regulations and their requirements under N.4.b of NUREG-0654 revision 2. (RAI 54)

Staff's finding: However, the following information is included in the evaluation criteria N.4.a, and should be removed from the common emergency plan because it provides a different participation and periodicity than NUREG-0654 criteria.

> *Emergency Medical Drill offsite participation and periodicity for support Hospital and Ambulance services are performed in accordance with the 42 CFR 482.15 regulations and are not included in the scope of the station medical drills.*

The application did not provide sufficient justification that supports a finding that periodic drills are (will be) conducted to develop and maintain key skills are provided.

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Path Forward

Currently NRC staff does not see sufficient justification for the discussed issues. NextEra should provide sufficient justification for the discussed issues to allow the NRC staff to continue its review of the application.