

SAFETY EVALUATION BY THE OFFICE OF
NUCLEAR MATERIAL SAFETY AND SAFEGUARDS
RELATED TO AMENDMENT NO. 257
DUKE ENERGY FLORIDA, LLC
CRYSTAL RIVER UNIT 3
INDEPENDENT SPENT FUEL STORAGE INSTALLATION

1.0 INTRODUCTION

The Crystal River Unit 3 Nuclear Plant (CR-3) is a decommissioning power reactor located at Red Level, Florida in Citrus County, about 5 miles south of Levy County. The site is 7.5 miles northwest of Crystal River, Florida, and 90 miles north of St. Petersburg, Florida. CR-3 is situated on the Gulf of Mexico, within the Crystal River Energy Complex. The licensee, Duke Energy Florida, LLC (DEF), is the holder of the CR-3 Operating License No. DPR-72, issued pursuant to the Atomic Energy Act of 1954, as amended, and Part 50, "Domestic Licensing of Production and Utilization Facilities," of Title 10 of the Code of Federal Regulations (10 CFR).

By application dated January 16, 2019 (Reference 1), DEF requested changes to the CR-3 Independent Spent Fuel Storage Installation – Only Emergency Plan (IOEP) pursuant to 10 CFR 50.54(q). The proposed changes include the replacement of the Emergency Response Coordinator position with trained on-shift personnel and other miscellaneous administrative/editorial changes.

2.0 REGULATORY EVALUATION

This safety evaluation addresses the acceptability of the proposed changes to the CR-3 IOEP. The regulatory requirements on which the NRC staff based its review are provided below.

2.1 Regulatory Requirements

The planning standards in 10 CFR 50.47(b) establish the requirements that the onsite and off-site emergency response plans must meet for the NRC staff to make a finding that there is reasonable assurance that the licensee can and will take adequate protective measures in the event of a radiological emergency. Specifically, on-shift emergency response organization staffing is addressed under planning standard 10 CFR 50.47(b)(2), which states:

On-shift facility licensee responsibilities for emergency response are unambiguously defined, adequate staffing to provide initial facility accident response in key functional areas is maintained at all times, timely augmentation of response capabilities is available and the interfaces among various onsite response activities and offsite support and response activities are specified.

The requirement for emergency medical support is in planning standard 10 CFR 50.47(b)(12), which states:

Arrangements are made for medical services for contaminated injured individuals.

The requirement for radiological emergency response training, which encompasses training for onsite fire and medical responses, is in planning standard 10 CFR 50.47(b)(15), which states:

Radiological emergency response training is provided to those who may be called on to assist in an emergency.

In addition, Appendix E to 10 CFR Part 50, "Emergency Planning and Preparedness for Production and Utilization Facilities," Section IV, Part A, "Organization," states, in part:

The organization for coping with radiological emergencies shall be described, including definition of authorities, responsibilities, and duties of individuals assigned to the licensee's emergency organization...."

2.2 Guidance

Regulatory Guide 1.101, Revision 2, "Emergency Planning and Preparedness for Nuclear Power Reactors" (Reference 2), provides guidance on methods acceptable to the NRC staff for implementing specific parts of the NRC's regulations – in this case, 10 CFR 50.47(b) and Appendix E to 10 CFR Part 50. Regulatory Guide 1.101 endorses Revision 1 to NUREG-0654/FEMA-REP-1 (NUREG-0654), "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants" (Reference 3), which provides specific evaluation criteria as a means for complying with the planning standards set forth in 10 CFR 50.47(b).

NUREG-0654, Section II, Evaluation Criteria II.B.1 and II.B.5 address planning standard 10 CFR 50.47(b)(2).

Evaluation Criterion II.B.1 states:

Each licensee shall specify the onsite emergency organization of plant staff personnel for all shifts and its relation to the responsibilities and duties of the normal shift complement.

Evaluation Criterion II.B.5 states, in part:

Each licensee shall specify the positions or title and major tasks to be performed by the persons to be assigned to the functional areas of emergency activity. For emergency situations, specific assignments shall be made for all shifts and for plant staff members, both onsite and away from the site. These assignments shall cover the emergency functions in Table B-1 entitled, "Minimum Staffing Requirements for Nuclear Power Plant Emergencies." The minimum on-shift staffing levels shall be as indicated in Table B-1.

NUREG-0654, Section II, Evaluation Criterion II.L.2 addresses planning standard 10 CFR 50.47(b)(12), which states:

Each licensee shall provide for onsite first aid capability.

NUREG-0654, Section II, Evaluation Criterion II.O.3 addresses planning standard 10 CFR 50.47(b)(15), which states:

Training for individuals assigned to licensee first aid teams shall include courses equivalent to Red Cross Multi-Media.

3.0 TECHNICAL EVALUATION

The NRC staff has reviewed the licensee's regulatory and technical analyses in support of its proposed emergency plan changes, as described in DEF's application. The staff's technical evaluation is detailed below

3.1 Proposed Changes

In its application dated January 16, 2019, DEF proposed a change to the CR-3 IOEP to replace the Emergency Response Coordinator position with trained on-shift personnel.

Additionally, the application identified other changes, which are administrative in nature to support the implementation of the above change, as well as some additional editorial changes. These editorial changes included revising the references to the Seven Rivers Regional Medical Center to the Bayfront Health Seven Rivers Hospital; adding a reference to Appendix A, "Cross Reference IOEP Section to Planning Standards/Requirements and Implementing Procedures," for the procedure that implements the CR-3 Fire Protection Program, and correcting an incorrect title in Appendix B, "Agreements with Supporting Organizations," of the IOEP.

As part of its evaluation, the NRC staff has reviewed the licensee's regulatory and technical analyses in support of the proposed changes to the CR-3 IOEP, as described in the application dated January 16, 2019. A summary of the NRC staff's evaluation is provided below.

3.1.1 Replacement of the Emergency Response Coordinator position with trained on-shift personnel

DEF states that the Emergency Response Coordinator position is a Crystal River Energy Complex position that serves CR-3 and the co-located fossil and natural gas plants. The Emergency Response Coordinator position is currently staffed by the individual responsible for the command and control function for all fires at the Crystal River Energy Complex. The Emergency Response Coordinator is also the designated medical responder for medical emergencies and is Emergency Medical Technician certified. Since this position has been available at the Crystal River Energy Complex for many years, CR-3 incorporated the position into the IOEP. DEF further states that due to licensee's organizational restructuring, the Emergency Response Coordinator position is being eliminated at the Crystal River Energy Complex. Consequently, CR-3 proposed to replace the Emergency Response Coordinator position with other existing CR-3 positions that will satisfy the regulatory requirements for fire and medical response.

DEF states that the medical response for the facility will be provided by training all CR-3 shift personnel in American Red Cross Basic First Aid (or equivalent) techniques and methods for basic life support to injured persons. These personnel will also be trained in use of the Automatic Emergency Defibrillator (AED) and Cardiopulmonary Resuscitation. DEF further states there will be sufficient medical supplies located within the Security Operations Center

(SOC) inside the protected area for CR-3 shift personnel to perform this function. CR-3 shift personnel will also determine if additional medical assistance is required and will be responsible to request transportation for injured persons to a medical facility, as required. In addition, DEF states that the actual medical response time is expected to decrease as Security personnel are already within the ISFSI protected area, whereas the Emergency Response Coordinator is not dedicated to the CR-3 site and could be at another facility within the complex performing a different function.

DEF states that the Emergency Response Coordinator position is also currently trained in firefighting techniques, is the designated position to take command and control during a fire, and interfaces with the off-site fire department that would be brought in to combat large fires. With the elimination of the Emergency Response Coordinator position at the Crystal River Energy Complex, DEF states that it will train all CR-3 shift employees on how to use a fire extinguisher to fight small fires and will ensure that fire extinguishers are available for use by the on-shift personnel inside the protected area. DEF further states that to minimize the potential for a fire, transient combustibles are controlled in the protected area. In addition, a sprinkler system is installed inside the SOC within the protected area, and a fire hydrant is available inside the protected area to supply water for mitigating or extinguishing fires. These measures are identified in the CR-3 ISFSI Fire Protection Plan. Again, DEF states that the actual response time to perform fire protection functions is expected to decrease as any potential delay in the Emergency Response Coordinator accessing the protected area will no longer occur. Additionally, the Fire Protection Plan for CR-3 structures outside the ISFSI has also evolved from primary response being the plant fire brigade to a response from off-site fire response organizations. The Emergency Coordinator position will have responsibility to contact the off-site fire response organization in the event of a fire within the ISFSI protected area.

The NRC staff evaluated the proposed change and determined that the reassignment of the first aid and firefighting duties to on-shift personnel is acceptable because personnel will be trained to perform these duties and will be onsite and available at all times. Based on the assessment above, the NRC staff concludes that the proposed CR-3 IOEP continues to meet the planning standards of 10 CFR 50.47(b)(2), (12) and (15), and the requirements of Section IV, Part A of Appendix E to 10 CFR Part 50.

3.1.2 Other Administrative/Editorial Changes

The NRC staff has reviewed the other miscellaneous changes to the CR-3 IOEP, made to support the implementation of the change above. Specifically, the application identified other changes, some of which are administrative in nature to support the implementation of the above changes and some additional editorial changes. These changes included revising the references to the Seven Rivers Regional Medical Center to the Bayfront Health Seven Rivers Hospital; adding reference to a procedure that implements the CR-3 Fire Protection Program, and the correction of an incorrect title in the CR-3 IOEP. These administrative/editorial changes were evaluated as part of the proposed change in Section 3.1.1, and the NRC staff concluded that these changes do not negatively impact the licensee's ability to continue to meet the applicable planning standards of 10 CFR 50.47(b) and the requirements of Appendix E to 10 CFR Part 50, as exempted.

3.4 Summary

The NRC staff performed a technical and regulatory review of the proposed changes to the CR-3 IOEP. Based on this review, the NRC staff finds that the proposed changes to the

CR-3 IOEP continue to meet the applicable planning standards in 10 CFR 50.47(b) and the requirements in Appendix E to 10 CFR Part 50, as exempted, and provide reasonable assurance that adequate protective measures can and will be taken in the event of a radiological emergency. Therefore, the NRC staff concludes that the proposed CR-3 IOEP changes to certain staffing responsibilities, as described in the application dated January 16, 2019, are acceptable.

4.0 STATE CONSULTATION

In accordance with the 10 CFR 50.91(b)(4) of the Commission's regulations, the State of Florida official was notified of the proposed issuance of the amendments on March 19, 2019. The State official had no comments.

5.0 ENVIRONMENTAL CONSIDERATION

The amendments change the site emergency plan. The amendments relate, in part, to changes in staffing and transfer of responsibilities. The NRC staff has determined that the amendments involve no significant increase in the amounts, and no significant change in the types of any effluents that may be released off-site, and that there is no significant increase in individual or cumulative occupational radiation exposure. The Staff has previously issued a proposed finding that the amendments involve no significant hazards consideration, and there has been no public comment on such finding published in the *Federal Register* on February 12, 2019 (84 FR 3507). Accordingly, the amendments meet the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9) and 51.22(c)(10). Pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the issuance of these amendments.

6.0 CONCLUSION

The NRC Staff has concluded, based on the considerations discussed above, that: (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) there is reasonable assurance that such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendments will not be inimical to the common defense and security or to the health and safety of the public.

7.0 REFERENCES

1. Duke Energy letter to U.S. Nuclear Regulatory Commission, "Crystal River Unit 3 – License Amendment Request #326, Revision 0, ISFSI Only Emergency Plan, Revision 1," dated January 16, 2019 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML19016A496).
2. Regulatory Guide 1.101, Revision 2, "Emergency Planning and Preparedness for Nuclear Power Reactors," dated October 1981 (ADAMS Accession No. ML090440294).
3. NUREG-0654/FEMA-REP-1, Revision 1, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants," dated November 1980 (ADAMS Accession No. ML040420012).

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