UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION IV
1600 E. LAMAR BLVD
ARLINGTON, TX 76011-4511

November 3, 2016

Mr. Rich Anderson, Site Vice President
Arkansas Nuclear One
Entergy Operations, Inc.
1448 SR 333
Russellville, AR 72802-0967

SUBJECT: ARKANSAS NUCLEAR ONE, UNITS 1 AND 2 - NOTIFICATION OF NRC INSPECTION OF THE IMPLEMENTATION OF MITIGATION STRATEGIES AND SPENT FUEL POOL INSTRUMENTATION ORDERS AND EMERGENCY PREPAREDNESS COMMUNICATION/STAFFING/ MULTI-UNIT DOSE ASSESSMENT PLANS (05000313/2017008 AND 05000368/2017008) AND REQUEST FOR INFORMATION

Dear Mr. Anderson:

The purpose of this letter is to notify you that the U.S. Nuclear Regulatory Commission (NRC) staff will conduct a mitigation strategies for beyond-design-basis external events, spent fuel pool instrumentation, and emergency preparedness enhancements inspection at Arkansas Nuclear One, Units 1 and 2, from January 23 – 27, 2017. The inspection will consist of three reactor inspectors from the NRC Region IV office plus one of the assigned resident inspectors at Arkansas Nuclear One for one week. The inspection will be conducted in accordance with the NRC's Temporary Instruction 2515/191, "Inspection of the Implementation of Mitigation Strategies and Spent Fuel Pool Instrumentation Orders and Emergency Preparedness Communication/Staffing/Multi-Unit Dose Assessment Plans."

Experience has shown that this inspection is resource intensive both for the NRC inspectors and licensee staff. In order to minimize the impact to your on-site resources and to ensure a productive inspection, we have enclosed a request for documents needed for this inspection activity. Please note that the documents are requested to be provided by December 30, 2016. During the on-site inspection, inspectors will verify that plans for complying with NRC Orders EA-12-049 and EA-12-051 are in place and are being implemented. Inspectors will also verify the establishment of staffing and communications plans provided in response to the March 12, 2012, request for information letter, and multi-unit dose assessment information provided per COMSECY-13-0010, Schedule and Plans for Tier 2 Order on Emergency Preparedness for Japan Lessons Learned, dated March 27, 2013. These plans and information were provided in the site-specific submittals, which were subsequently reviewed by the NRC staff for understanding and documented in the NRC's plant safety evaluations and safety assessments. Therefore, appropriate personnel knowledgeable of the station's FLEX strategies, spent fuel pool instrumentation, and emergency preparedness enhancements should be available to support the inspectors at the site during the inspection.

If there are any questions about this inspection or the material requested, please contact the team lead inspector, John M. Mateychick, by telephone at (817) 200-1560 or by e-mail at john.mateychick@nrc.gov.

This letter does not contain new or amended information collection requirements subject to the Paperwork Reduction Act of 1995 (44 U.S.C. 3501 et seq.). Existing information collection requirements were approved by the Office of Management and Budget, control number 3150 0011. The NRC may not conduct or sponsor, and a person is not required to respond to, a request for information or an information collection requirement unless the requesting document displays a currently valid Office of Management and Budget control number.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice and Procedure," a copy of this letter and its enclosure will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records (PARS) component of NRC's document system (ADAMS). ADAMS is accessible from the NRC Web site at http://www.nrc.gov/reading-rm/adams.html (the Public Electronic Reading Room).

Sincerely,

/RA/

Gregory E. Werner, Chief
Engineering Branch 2
Division of Reactor Safety

Docket Nos. 50-313 and 50-368
License Nos: DPR-51 and NPF-6

Enclosure:
Request for Information

cc w/encl: Electronic Distribution

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See next page

ADAMS ACCESSION NUMBER: ML16312A067

☑ SUNSI Review By: JMateychick		ADAMS ☑ Yes ☐ No	☑ Publicly Available ☐ Non-Publicly Available		☑ Non-Sensitive ☐ Sensitive		Keyword: NRC-002
OFFICE	SRI:EB2	C:EB2					
NAME	JMateychick	GWerner					
SIGNATURE	/RA/	/RA/					
DATE	10/31/16	11/3/16					

OFFICIAL RECORD COPY

Letter to Rich Anderson from Gregory E. Werner, dated November 3, 2016

SUBJECT: ARKANSAS NUCLEAR ONE, UNITS 1 AND 2 - NOTIFICATION OF NRC INSPECTION OF THE IMPLEMENTATION OF MITIGATION STRATEGIES AND SPENT FUEL POOL INSTRUMENTATION ORDERS AND EMERGENCY PREPAREDNESS COMMUNICATION/STAFFING/ MULTI-UNIT DOSE ASSESSMENT PLANS (05000313/2017008 AND 05000368/2017008) AND REQUEST FOR INFORMATION

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Request for Information
FLEX Strategies, Spent Fuel Pool Instrumentation, and EP Enhancements Inspection
Arkansas Nuclear One, Units 1 and 2

Information Requested for the In-Office Preparation Week

The following information should be sent to the Region IV office in hard copy or electronic format (use of the Certrec IMS information portal is preferred), to the attention of John Mateychick, by December 30, 2016. (If electronic/CD format is preferred by Arkansas Nuclear One, three copies will need to be sent to the Region IV office and one to the Arkansas Nuclear One resident inspectors' office.) The inspectors will select specific items from the information requested below and then request from your staff additional documents needed during the on-site inspection week. Also, we request that you categorize the documents in your response with the numbered list below. Please provide requested documentation electronically if possible. If requested documents are large and only hard copy formats are available, please inform the team lead inspector, and provide subject documentation during the first day of the on-site inspection. If you have any questions regarding this information request, please call the team lead inspector as soon as possible.

TI 2515/191 - Appendix A

1. Provide current revision of the FLEX Final Integrated Plan, including any revisions since January 2016 submission to the NRC.
2. Provide the FLEX strategy basis document.
3. Provide the operating, off-normal, abnormal, and/or emergency procedures where entry into the FLEX support guideline(s) is initiated.
4. Provide a list of key pieces of equipment that directly perform a FLEX mitigation strategy for core cooling (reactor coolant system and steam generators), containment, and/or spent fuel pool cooling.
5. Provide a list and copies of every FLEX support guideline or equivalent procedure which you developed or revised to implement your mitigating strategies. Provide copies of the FLEX support guidelines/procedures which address (as applicable):
   a. Restoration of AC power to essential loads.
   b. DC Load shedding.
   c. Primary (reactor coolant system) loss and makeup, including water source(s).
   d. Secondary/steam generator makeup, including water source(s).
   e. Containment isolation and safe shutdown valve operations while AC power is unavailable.
   f. Monitoring and makeup options to the spent fuel pool.
   g. Portable lighting (e.g., flashlights or headlamps) necessary for ingress and egress to plant areas required for deployment of FLEX strategies.
   h. Communications systems required for deployment of FLEX strategies.
   i. Achieving area access during a loss of AC power, including the protected area and internal locked areas where equipment operation is necessary.

j. Mitigating the effects of a loss of forced ventilation/cooling.

k. Access and pathways to locations where operators will be required to perform local manual operations.

l. Potential equipment failure as a result of loss of heat tracing during extended loss of alternating current power.

m. Replenishment of fuel to diesel/gas powered equipment (e.g., FLEX diesel generators, pumps, etc.).

n. Deployment and operation of portable systems (such as portable power supplies and portable pumps).

o. Deployment routes and staging locations for FLEX portable equipment.

p. Containment venting (and/or analysis to demonstrate that containment venting is not required).

q. Pre-staging or deployment of FLEX equipment necessary to support shutdown risk processes/procedures (i.e., FLEX strategies in Modes 5 and 6).

6. Applicable site-specific hazards.

   a. Seismic

      i. Provide documents which show the locations and configuration of structures which store FLEX equipment.

      ii. Provide the evaluation/evidence to support that FLEX equipment is stored in location(s) such that <u>each</u> location:

         1. Meets the plant's design basis safe-shutdown earthquake.

         2. Meets the design requirements as described in ASCE 7-10, "Minimum Design Loads for Buildings and Other Structures."

         3. Is outside a structure and evaluated for seismic interactions to ensure equipment is not damaged by non-seismically robust components or structures.

      iii. Provide documentation that explains how large portable FLEX equipment such as pumps and power supplies are secured to protect them during a seismic event (i.e., safe-shutdown earthquake level).

      iv. Provide documents which show that stored equipment and structures are protected from seismic interactions to ensure that unsecured and/or non-seismic components do not damage the equipment.

      v. Provide the travel route(s) for FLEX equipment from storage location(s) to their location(s) of use, and evaluation(s) which demonstrate that the potential for soil liquefaction is not of a concern for these travel route(s).

      vi. Seismic concerns for water source(s).

         1. If the FLEX water sources are seismically robust, then provide the assessment confirming that conclusion.

2. If the FLEX water sources are not seismically robust, then provide:
    a. An assessment of alternate water sources.
    b. Procedure(s) which describe when and how to access those sources.

vii. If power is required to move or deploy FLEX equipment, then describe and identify the locations of the power supplies which provide that power, and provide the procedures which describe implementing those power supplies.

viii. If equipment is needed to move the FLEX equipment, provide documents that show how that equipment is protected from the seismic event.

ix. Provide documents which show that the FLEX equipment connection points to permanently installed plant system are seismically qualified to the same extent as the permanently installed equipment.

x. Provide documents which show that staged tools used to connect FLEX equipment are acceptable/compatible with the connections used.

b. Extreme temperatures

For each key piece of equipment described in number 4 (above) that directly performs or implements a FLEX mitigation strategy:

1. Provide the document which describes the high and low-temperature limit within which the equipment will function.
2. Describe how the equipment is maintained within its allowable temperature range in its storage location.

7. Provide the station-specific FLEX strategies time validation study(ies).
8. Relative to the testing and maintenance program for FLEX equipment, for each key piece of equipment described in number 4 (above) that directly performs or implements a FLEX mitigation strategy:
    a. Identify the equipment and provide documents that describe either the testing performed (including electrical cables) or other means used to verify that the equipment can perform its required function.
    b. For portable equipment, provide documentation describing how maintenance and testing the equipment is in accordance with INPO AP-913 or an acceptable alternative.
9. Provide documents which describe the programmatic controls in place to ensure that if equipment or applicable connections are unavailable (e.g., due to maintenance), then compensatory measures are implemented in accordance with guidance outlined in NEI 12-06.
10. Identify the procedure(s) provided in response to number 4 above which address:
    i. Early notification to mobilize the offsite response.
    ii. Establishment of a point of delivery for the offsite equipment.
    iii. Arrangements for delivery and deployment at the site.
    iv. Sufficient supplies of commodities to support the equipment and site personnel.
    a. Provide documents which describe your evaluation of what equipment and commodities are needed to sustain and backup the site's coping strategies.

b. Provide documents which show that you have established means to ensure that fuel for FLEX equipment can be delivered to the site if on-site fuel is unusable or depleted.

c. Provide documents which describe the process by which you will revise the required supplied equipment due to changes in the FLEX strategies or plant equipment or equipment obsolescence.

11. Provide documents which show that your installed mechanical and electrical connections are compatible with Phase 3 equipment.

    a. Provide the station-specific National SAFER Center "Playbook."

12. Relative to personnel training on FLEX strategies, provide:

    a. FLEX training bases document(s).

    b. Lesson plans for site emergency response leaders responsible for the implementation of FLEX strategies. (Records for staff completing this training may be requested to be provided to the inspectors during the on-site inspection week.)

    c. Lesson plans for site personnel responsible for the execution of mitigating strategies for beyond-design-basis external events (i.e., operators, craft personnel, security, radiation protection, etc.) to ensure familiarity and considering available job aids, instructions, and mitigating strategy time constraints.

13. Provide the procedure(s) which describe your configuration control program; and provide lists that identify by number, name, and revision number the documents, drawings, sketches, calculations, analyses, procedures/guidance and evaluations related to your mitigation strategies.

14. Listing of corrective action program document summaries generated related to FLEX equipment, strategies, procedures, and/or training.

TI 2515/191 - Appendix B

15. Provide the procedures for maintenance, testing, calibration, and use of the primary and backup spent fuel pool instrumentation channels.

16. Provide documents which describe the training program that addresses the use, maintenance, calibration, surveillance, and the use of alternate power to the primary and backup spent fuel pool instrument channels. Specifically provide training materials used in that program.

TI 2515/191 - Appendix C

17. Communications:

    a. Provide documents which show that the communications system(s), technologies, equipment, and power supplies would be available from the beginning of the event and operate during an extended loss of alternating current power.

    b. Provide documents which show that you have completed appropriate maintenance and testing program activities to verify off-site response organizations communication systems operate as designed.

c. Provide the procedures and/or guidance used to implement the communication capabilities.

d. Provide documents which show that any new communications equipment, portable power supplies, and/or systems have been incorporated into the testing and preventative maintenance programs.

18. Staffing:

    a. Provide documents which show that on-site and augmented staff will be available to implement the strategies in response to a large-scale natural event that results an extended loss of alternating current power and impedes access to the site, and that functions/tasks have been appropriately staffed.

    b. Provide documents which show that the site access methods (e.g., roadways, navigable bodies of water and dockage, airlift, etc.) expected to be available following the event and available to the Emergency Response Organization [as described in your Phase 1 and 2 staffing assessments and NRC safety assessment].

    c. Provide documents which show the testing, training, and drills/exercises performed by you to demonstrate the Emergency Response Organization's ability to utilize the communications systems and/or equipment.

19. Provide documents which show that your multi-unit dose assessment is capable of analyzing concurrent radiological releases from all on-site significant sources (including releases from spent fuel pools) during an extended loss of alternating current power.

Lead Inspector Contact Information:

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