



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D.C. 20555-0001

June 14, 2017

Ms. Mary J. Fisher  
Senior Director Fort Calhoun Station  
Decommissioning  
Omaha Public Power District  
Fort Calhoun Station  
9610 Power Lane  
Mail Stop FC-2-4  
Blair, NE 68008

**SUBJECT: FORT CALHOUN STATION, UNIT 1 – WITHDRAWAL OF ORDER EA-12-049, “ORDER MODIFYING LICENSES WITH REGARD TO REQUIREMENTS FOR MITIGATION STRATEGIES FOR BEYOND-DESIGN-BASIS EXTERNAL EVENTS” (CAC NO. MF0969)**

Dear Ms. Fisher:

By letter dated March 12, 2012 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML12054A735), the U.S. Nuclear Regulatory Commission (NRC) issued Order EA-12-049 to Omaha Public Power District (OPPD, the licensee). This order requires certain actions at Fort Calhoun Station, Unit 1 (FCS) associated with the Fukushima Near-Term Task Force Recommendations. Order EA-12-049 directed all power reactor licensees, and holders of construction permits in active or deferred status, to develop and implement strategies to maintain or restore core cooling, containment, and spent fuel pool (SFP) cooling capabilities during beyond-design-basis external events (BDBEEs).

Section IV of Order EA-12-049 required that OPPD submit an overall integrated plan by February 28, 2013, describing how FCS planned to achieve compliance with the requirements of the Order. The licensee responded to the order by letter dated February 28, 2013 (ADAMS Accession No. ML13064A298).

Section IV of the order also provided the NRC’s Director of the Office of Nuclear Reactor Regulation the authority to relax or rescind any or all of the conditions of the order upon demonstration by the licensee of good cause. The NRC’s Enforcement Manual, Section 2.7.8, states that the designated Agency official may relax or terminate conditions of the order. The Enforcement Manual also states that in some cases a decision is made by the NRC to withdraw an order.

By letter dated August 12, 2016 (ADAMS Accession No. ML16225A539), OPPD submitted a request for an extension of the Order EA-12-049 full compliance date from December 31, 2016, to August 31, 2017. By letter dated November 21, 2016 (ADAMS Accession No. ML16277A509), the NRC granted this request.

By letter dated June 24, 2016 (ADAMS Accession No. ML16176A213), OPPD notified the NRC that it planned to permanently cease operations at FCS. In addition, OPPD indicated its intent to supplement the letter with a certification of the date on which operations have ceased, or will cease, in accordance with Title 10 of the *Code of Federal Regulations* (10 CFR), Sections 50.82(a)(1)(i) and 50.4(b)(8). This notification was updated by letter dated August 25, 2016 (ADAMS Accession No. ML16242A127), in which OPPD certified October 24, 2016, as a planned date for permanent cessation of operations. By letter dated November 13, 2016 (ADAMS Accession No. ML16319A254), OPPD certified to the NRC that it had permanently ceased power operations at FCS, effective October 24, 2016. Pursuant to 10 CFR 50.82(a)(1)(ii), the licensee also certified that it had permanently defueled the FCS reactor vessel and placed the fuel in the SFP. The licensee's letter also acknowledged that with the certification provided, operation of the FCS reactor, as well as emplacement or retention of fuel into the reactor vessel, was no longer authorized by the site's 10 CFR Part 50 license, pursuant to 10 CFR 50.82(a)(2).

By letter dated May 1, 2017, OPPD requested rescission of Order EA-12-049 (ADAMS Accession No. ML17121A338). In this letter, OPPD provided the following information to demonstrate good cause for the withdrawal of Order EA-12-049:

- Guidance and strategies to maintain or restore core cooling and primary containment capabilities are unnecessary at FCS because nuclear fuel has been permanently removed from the reactor vessel and primary containment.
- Because fuel in the FCS SFP was last irradiated (i.e., used for power generation) on October 24, 2016, the fuel will have at least 311 days of radioactive decay by the current required order compliance date of August 31, 2017.
- Since FCS has become a permanently shutdown and defueled facility, the safety of the fuel in the SFP becomes the primary safety function for site personnel. In the event of a challenge to the safety of fuel stored in the SFP, decision-makers would not have to prioritize actions, and the focus of the staff would be the SFP condition.
- Contracts are in place with local fire departments to provide makeup cooling water to the SFP, upon request.

Based on the calculated decay heat level as of August 31, 2017, the time to boil in the SFP will be approximately 32 hours and the time to reduce SFP water inventory to a level 10 feet above the top of the spent fuel rack will be an additional 153.5 hours. Thus, the licensee would have a total of approximately 185 hours, or 7.7 days, to respond to an extended loss of power to the normal SFP cooling system, such as what could occur following a BDBEE, prior to water level reaching a point where it would no longer maintain substantial shielding for a person standing on the SFP operating deck.

The NRC staff reviewed the licensee's statements and concludes that the absence of fuel in the reactor vessel and the absence of challenges to the containment render the development of guidance and strategies to maintain or restore core cooling and containment capabilities unnecessary.

The NRC staff also reviewed the licensee's statements with regard to decay heat levels, and determined through a confirmatory evaluation that the predicted fuel decay heat levels and the SFP thermal-hydraulic estimate under loss of cooling conditions performed by OPPD were reasonable.

The NRC staff concludes that, given the low decay heat levels and slow heat up rate, the reliance on the SFP water inventory for passive cooling will provide a level of protection equivalent to that which would be provided by the initial phase of the guidance and strategies for maintaining or restoring SFP cooling capabilities, which would otherwise be necessary for compliance with Order EA-12-049.

The staff further concludes that the long time for boiling to reduce the SFP inventory to a point at which makeup would be necessary for radiation shielding purposes eliminates the need for the transition phase of the guidance and strategies that would be necessary for compliance with Order EA-12-049 using onsite portable equipment. In addition, the licensee has indicated that onsite portable equipment will be available to mitigate a postulated BDBEE. This includes pumps, valves, diesel generators, and piping stored in a robust structure that is protected from BDBEEs. Further, the licensee has equipment available, pursuant to the requirements of 10 CFR 50.54(hh)(2), and this equipment is also stored in a robust structure. Thus, this equipment will further enhance the site's ability to cope with a BDBEE.

Finally, the staff concludes that the low decay heat and long boil-off period of the SFP provides sufficient time for the licensee to obtain off-site resources on an ad hoc basis to sustain the SFP cooling function indefinitely, eliminating the need for the final phase of the guidance and strategies that would be necessary for compliance with Order EA-12-049.

Therefore, for the reasons discussed above, and consistent with the NRC's Enforcement Manual, the NRC staff concludes that good cause has been demonstrated to withdraw the order. All other regulatory requirements remain applicable and are not impacted by withdrawal of this order. Accordingly, based upon the authority granted to the Director, Office of Nuclear Reactor Regulation, Order EA-12-049 is withdrawn in its entirety for FCS.

Sincerely,

A handwritten signature in black ink, appearing to read 'W. M. Dean', written in a cursive style.

William M. Dean, Director  
Office of Nuclear Reactor Regulation

Docket No. 50-285

cc: Listserv

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 DATED JUNE 14, 2017

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**ADAMS Accession No.: ML17124A114**

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