

EDO Principal Correspondence Control

FROM: DUE: 07/27/12

EDO CONTROL: G20120458
DOC DT: 06/21/12
FINAL REPLY:

Wallace L. Taylor
Sierra Club, Iowa Chapter

TO:

Borchardt, EDO

FOR SIGNATURE OF :

** GRN **

CRC NO:

Borchardt, EDO

DESC:

2.206 - Fort Colhoun Nuclear Power Station
(EDATS: OEDO-2012-0390)

ROUTING:

Borchardt
Weber
Johnson
Ash
Mamish
OGC/GC
Collins, RIV
Zobler, OGC
Mensah, NRR
Banic, NRR
Russell, NRR
Scott, OGC
Merzke, OEDO

DATE: 06/27/12

ASSIGNED TO:

CONTACT:

NRR

Leeds

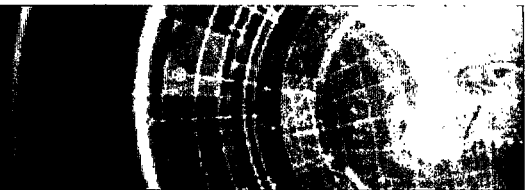
SPECIAL INSTRUCTIONS OR REMARKS:

Template: EDO-001

E-RIDS: EDO-01

EDATS

Electronic Document and Action Tracking System



EDATS Number: OEDO-2012-0390

Source: OEDO

General Information

Assigned To: NRR

OEDO Due Date: 7/27/2012 11:00 PM

Other Assignees:

SECY Due Date: NONE

Subject: 2.206 - Fort Calhoun Nuclear Power Station

Description:

CC Routing: RegionIV; OGC; Tanya.Mensah@nrc.gov; Merrilee.Banic@nrc.gov; Andrea.Russell@nrc.gov; Catherine.Scott@nrc.gov

ADAMS Accession Numbers - Incoming: NONE

Response/Package: NONE

Other Information

Cross Reference Number: G20120458

Staff Initiated: NO

Related Task:

Recurring Item: NO

File Routing: EDATS

Agency Lesson Learned: NO

OEDO Monthly Report Item: NO

Process Information

Action Type: 2.206 Review

Priority: Medium

Sensitivity: None

Signature Level: NRR

Urgency: NO

Approval Level: No Approval Required

OEDO Concurrence: NO

OCM Concurrence: NO

OCA Concurrence: NO

Special Instructions:

Document Information

Originator Name: Wallace L. Taylor

Date of Incoming: 6/21/2012

Originating Organization: Sierra Club - Iowa Chapter

Document Received by OEDO Date: 6/27/2012

Addressee: R. W. Borchardt, EDO

Date Response Requested by Originator: NONE

Incoming Task Received: Letter



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IOWA CHAPTER

June 21, 2012

Mr. William Borchardt
Executive Director for Operations
U.S. Nuclear Regulatory Commission
Washington, DC 20555

Dear Mr. Borchardt:

Please find enclosed a petition pursuant to 10 CFR 2.206 to revoke the license of the Fort Calhoun Nuclear Power Station. You may contact me directly by phone at 319-366-2428, or by e-mail at wtaylorlaw@aol.com.

Thank you for your attention to this matter.

Very truly yours,

Wallace L. Taylor
Legal Counsel

EDO --G20120458



**SIERRA
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June 21, 2012

Mr. William Borchardt
Executive Director for Operations
U.S. Nuclear Regulatory Commission
Washington, DC 20555

**10 CFR 2.206 PETITION REQUESTING THE NUCLEAR REGULATORY
COMMISSION TO REVOKE OMAHA PUBLIC POWER DISTRICT'S LICENSE
TO OPERATE THE FORT CALHOUN NUCLEAR POWER STATION**

Dear Mr. Borchardt:

The Iowa Chapter of the Sierra Club hereby requests that the Nuclear Regulatory Commission revoke Omaha Public Power District's (OPPD's) license to operate the Fort Calhoun Nuclear Power Station near Blair, Nebraska.

The Sierra Club is the nation's largest grassroots environmental organization with over 600,000 members. Its Iowa Chapter has approximately 5,000 members, including members who live in Pottawattamie County and Harrison County, just across the Missouri River from the Fort Calhoun plant. The Sierra Club supports sustainable energy alternatives that do not harm the environment. The Sierra Club opposes nuclear power because its fuel cycle from uranium mining to spent radioactive fuel poses grave dangers to the environment. In addition, reliance on nuclear power unjustifiably delays the beneficial transition to clean and renewable energy sources.

I. NRC AUTHORITY TO REVOKE A REACTOR LICENSE

Under 42 U.S.C. § 2133(b) Congress gives the NRC the authority to issue licenses to persons who "are equipped to observe and who agree to observe such safety standards to protect health and to minimize danger to life or property as the Commission may by rule establish."

Congress has also given the NRC the authority to take those licenses away if the licensee violates those standards. See, 42 U.S.C. § 2137.

The NRC recognizes this authority in its own regulations. See, 10 C.F.R. § 50.100. Under that regulation the NRC can revoke a license for (1) "any material false statement . . . of fact required of the applicant; (2) "conditions revealed by the applicant . . . which would warrant the Commission to refuse to grant a license on an original application"; (3) failure to . . . operate a facility in accordance with the terms of the construction permit or license"; or (4) "violation of, or failure to observe, any of the terms and provisions of the act, regulations, license, permit, or Order of the Commission."

The Fort Calhoun Nuclear Power Station fits perfectly into the description set forth in the law and regulation authorizing the revocation of licenses.

II. BACKGROUND ON FORT CALHOUN

The Fort Calhoun Station is located on the Missouri River near Blair, Nebraska. It generates 484 megawatts of electricity. The plant was first licensed in 1973. The license was renewed in 2003, extending the term of the license to 2033.

In 2009, the NRC did a flood risk assessment which found that the protection measures were only designed to handle floods to 1,009 feet above sea level, which was below the NRC mandated elevation of 1,014 feet for the plant. The risk assessment stated that at 1,010 feet, flooding would have "led to a 100 percent chance of a fuel damage if the emergency gasoline pumps didn't work."

A flood assessment performed by the NRC in 2010 indicated that the Fort Calhoun Station "did not have adequate procedures to protect the intake structure and auxiliary building against external flooding events." Licensee Event Report, U.S. Nuclear Regulatory Commission, May 16, 2011. The assessment also indicated that the facility was not adequately prepared for a "worst-case" flooding scenario. A number of potential flood water penetration points were discovered that could have impacted the raw feed water

supply to the cooling system, the auxiliary water supply and main switchgear (electrical) room. The NRC issued a notice of violation on October 6, 2010, finding that the plant was not prepared for a flood above 1,008 feet. OPPD challenged the NRC's conclusions in a series of conferences before admitting the violations and agreeing to install additional flood protection.

In early June of 2011, the Missouri River flooded, causing flood waters to encircle the Fort Calhoun plant. At that time Fort Calhoun was shut down, and had been since April of 2011, for refueling. Since the flood, Fort Calhoun remains shut down as the NRC continues to inspect and investigate the consequences of the flood. This investigation continually uncovers more problems with the plant.

II. HISTORY OF PROBLEMS AT FORT CALHOUN.

Since at least 1992, Fort Calhoun has had a history of violations of NRC and industry regulations and standards. On July 3, 1992, there was an electrical malfunction leading to the loss of 25,000 gallons of reactor coolant. After that incident, Sudesh Gambhir, writing in an OPPD newsletter, stated that Fort Calhoun had "hit the other side of the 'bathtub-shaped' reliability curve." In other words, the Fort Calhoun plant was reaching the end of its useful life. And that was in 1992. Surely, after 20 more years, the plant has finally reached the end of its useful life.

In 2001 leaking fuel rods at Fort Calhoun resulted from fretting and a mix of fuel assemblies.

In 2003, OPPD received a warning from the Corps of Engineers about flooding, which, given the occurrence of recent events, OPPD obviously ignored.

In 2005-2006, improper installation of a valve at Fort Calhoun degraded the condition of a safety system for 454 days. This resulted in a higher level of scrutiny by the NRC, to the Degraded Cornerstone Column. During that same inspection Fort Calhoun accumulated seven reportable failures of various components in mitigating systems that

count towards the safety system functional failure performance indicator.

In 2007, cesium-137 was found in tritium that had leaked from Fort Calhoun into the groundwater near the plant. Tritium is a radioactive form of hydrogen.

In 2010, issues relating to lack of flood preparedness gave Fort Calhoun the distinction of being one of three nuclear plants in the U.S. that the NRC was most concerned about. When the NRC issued a notice of violation to OPPD regarding the flood preparedness, OPPD challenged the NRC's conclusions, rather than taking steps to correct the problems. OPPD eventually backed down and agreed to install additional flood protection.

On March 4, 2011, OPPD sent a letter to the NRC stating the flooding at Fort Calhoun was highly unlikely and, therefore, requested that NRC remove the provision in the technical specification for the plant requiring a plant shutdown if the Missouri River level reaches 1009 feet. This was extremely poor planning by OPPD to say the least. Actually, it was reckless conduct with no consideration for the safety and operation of the plant.

Then, in June, 2011, the Missouri River flooded, surrounding the Fort Calhoun plant with floodwater. After the floodwaters receded and inspections could be conducted, numerous safety violations have been uncovered. And as the investigation continues, more violations become apparent and the plant is still shut down, with no anticipated date for its reopening.

On June 16, 2011, a potential flooding issue was found in relation to a hole in the floor at the 1007.5 foot level where the relief valve from a discharge pipe goes through the raw pump bay. Flooding from this penetration could have impacted the ability of the plant's raw water pumps to perform their mitigation functions.

During the time the flood waters surrounded the plant in June of 2011, a water-filled berm burst when a forklift punctured the berm. This caused the berm to collapse, so that it no longer provided protection to the plant from the floodwaters.

In addition to the water-filled berm, a concrete berm collapsed from the forces of floodwaters surrounding the plant. This required OPPD to transfer the plant's off-site power to on-site diesel generators because of water leaking around the concrete berm surrounding the main transformers.

On September 1, 2011, Fort Calhoun was placed in Column Four of the NRC's Reactor Oversight Process Action Matrix because of multiple violations of NRC regulations. These included a "yellow" finding of substantial safety significance because of inadequate strategies to protect the plant from flooding and a "white" finding of low to moderate safety significance for the failure of electrical components used to automatically shut down the reactor. Fort Calhoun was one of only two reactors nationwide in Column Four.

In October of 2011, it was discovered that 8 snubbers had been degraded due to the floodwaters. The snubbers' original design function was to allow thermal motion but restrain seismic motion. The snubbers were degraded to the point that they no longer provide adequate protection to the piping in the case of seismic events.

On November 14, 2011, the NRC issued an inspection report concerning Fort Calhoun. Several violations of NRC regulations were found.

- Failure to incorporate design information into the procedures for operation of the component cooling water system for temporary off-normal system conditions during refueling.

- Failure to have adequate instructions, procedures, or drawings including appropriate quantitative or qualitative acceptance criteria to ensure they can detect reactor coolant leakage. This resulted in a situation where no credited method was in place to ensure that the operators of Fort Calhoun were able to detect a one gallon per minute leak in four hours. This violation apparently occurred from November 21, 2008 until April 14, 2009, but was not corrected by OPPD prior to the post-flood inspection.

- Failure to identify and correct a condition adverse to quality. Specifically, with regard to the calibration of the load weighing system for the HE-2 crane prior to its use in lifting the spent fuel transfer cask, loaded with spent fuel, out of the fuel pool. This apparently occurred on July 7, 2009, but was not reported by OPPD and was not discovered by NRC until the post-flood inspection. This situation adversely impacted the spent fuel pool fuel handling attribute of the Barrier Integrity Cornerstone objective of providing reasonable assurance that physical design barriers (fuel cladding) protect the public from radionuclide releases caused by accidents or events.

In a February 14, 2012, inspection report, the NRC refers to an incident that occurred on May 24, 2011, that apparently resulted in a breach of security. The report does not describe the event or the problem but describes the violation as greater than very low security significance.

On February 14, 2012, the NRC issued an inspection report concerning Fort Calhoun. Several violations of NRC regulations were found.

- Failure to follow a procedure for placing the reactor coolant system level monitors into service. This failure resulted in the draining of approximately 1,800 gallons of reactor coolant to the reactor coolant drain tank. This problem could have led to a complete loss of reactor coolant inventory.

- Failure to perform testing and evaluation of safety-related heat exchangers in accordance with written procedures. Specifically, prior to November 16, 2011, the prerequisite calculated heat loads used to demonstrate validity of the performance testing of component cooling water heat exchanger test conditions did not agree to within the expected uncertainty, and ultrasonic flow meters were not calibrated to the appropriate range of test flow conditions. This affected the ability of systems to respond to initiating events to prevent core damage.

- Failure to follow procedures requiring workers to comply with radiological work permit instructions. Specifically, two workers changed the work scope for a

valve from reassembly to rework using abrasive pads without notifying radiation protection personnel. This violation affected the objective of ensuring adequate protection of worker health and safety from exposure to radiation during routine operations.

- Failure to develop and put into place guidelines for the choice of protective actions during an emergency that implemented federal guidance. This failure allowed the subsequent removal of recommendations to evacuate members of the public during a radiological emergency.

On March 1, 2012, OPPD submitted to the NRC a revised event report regarding inadequate flooding protection due to ineffective oversight. During identification and evaluation of flood barriers, unsealed through wall penetrations in the outside wall of the intake, auxiliary and chemistry and radiation protection buildings were identified that are below the licensing basis flood elevation. Additionally, a potential flooding issue was identified on the inside of the intake structure. Holes were noted in the floor at the 1007'6" level, which is the ceiling of the raw water vault. According to OPPD, a summary of the root causes included: a weak procedure revision process; insufficient oversight of work activities associated with external flood matters; ineffective identification, evaluation and resolution of performance deficiencies related to external flooding; and "safe as is" mindsets relative to external flooding events.

On March 2, 2012, a review of records for reactor containment building electrical penetrations found six penetrations that may not provide an adequate seal during worst case conditions as required. The current penetration configuration has existed since the plant was built. The concern is that the Teflon connections may degrade under conditions of high radiation and high temperature during an event.

On March 16, 2012, the NRC issued an inspection report and notice of violation regarding Fort Calhoun. The cover letter stated in pertinent part:

Overall, the [inspection] team noted deficiencies in all three areas of the problem identification and resolution process. Based on the inspection sample,

the team concluded that the implementation of the corrective action program and overall performance related to identifying, evaluating, and resolving problems was frequently less than adequate. Licensee identified problems were entered into the corrective action program at a low threshold; however, problems were not consistently prioritized and evaluated commensurate with the safety significance of the problems and corrective actions were not always implemented in a timely manner. Lessons learned from industry operating experience were not consistently reviewed and applied when appropriate. Audits and self-assessments were generally used to identify problems and appropriate actions; however, the adequacy of the corrective actions for issues identified in audits and self-assessments was inconsistent. . . . [T]here is a displayed lack of confidence by licensee employees that their concerns will receive the appropriate prioritization and resolution by licensee processes as required. Additionally, there were indications of a lack of resources in personnel as revealed by the high workload of many organizations.

On April 10, 2012, the NRC issued an inspection finding concerning the fire that occurred at the Fort Calhoun plant on June 7, 2011. This finding was given a designation of "red" or high safety significance. The fire started in a replacement electrical breaker where poor alignment between components and inadequate maintenance increased the electrical resistance in some parts, causing them to heat up and fail. Soot and smoke from the resulting fire then knocked out power to a redundant electrical system used for shut down at the time because of flooding along the Missouri River. The fire resulted in the loss of spent fuel cooling for approximately 90 minutes and could have resulted in the loss of a safety function or multiple failures in systems used to mitigate a severe accident, had one occurred. In the event of a serious accident, operators would have had to take compensatory measures to safely shut the plant down.

On April 27, 2012, a "non-licensed supervisory" employee was determined to be under the influence of illegal drugs. The implications of this situation are obvious, from not

attending to duties, to not being able to think though and follow procedures, to being unable to appropriately function during regular and emergency events.

On May 11, 2012, an inspection report identified three violations of NRC requirements. These violations related to a previously issued Yellow finding regarding the ability of the plant to mitigate an external flooding event. That previous finding was issued in 2010. These violations had apparently not been corrected by OPPD by the time of the flood in 2011.

On May 23, 2012, a crack was discovered in a pressurized heater. This was considered to be a degradation of the reactor coolant system barrier, the water piping and setup that keeps the reactor fuel from overheating.

On June 4, 2012, two instrument racks at Fort Calhoun were identified that were over the analyzed weight for the seismic analysis. The instruments on those racks are used for coolant pressure transmitters that are part of the reactor coolant system pressure boundary. A failure of the racks during a seismic event due to the excessive weight could result in a unisolable leak from the reactor coolant system.

At this point, Fort Calhoun is still shut down and there is no estimated date for restart.

III. NRC'S AUTHORITY TO REVOKE OPPD'S LICENSE TO OPERATE FORT CALHOUN

As discussed above, the NRC has the authority to revoke a license for violating its regulations. The NRC has exercised this authority liberally with regard to the licenses that it issues for possessing nuclear materials. It has used its authority to modify, suspend or revoke dozens of these types of licenses since 1996. It has used this authority when licensees have violated its regulations, when licensees have failed to conduct necessary tests, when licensees have failed to use employees with proper training, and when licensees have deliberately failed to provide the NRC with complete and accurate information. See, <http://www.nrc.gov/reading-rm/doc-collections/enforcement/actions/materials/>.

The NRC's own guidelines regarding enforcement sanctions would categorize the events at Fort Calhoun over the past 20 years at Severity Level I, the highest level, because those events involve (1) "situations involving particularly poor licensee performance, or involving willfulness"; (2) "situations when the violation results in a substantial increase in risk, including cases in which the duration of the violation has contributed to the substantial increase"; and (3) "situations when the licensee made a conscious decision to be in noncompliance in order to obtain an economic benefit." 63 F.R. 26630-OI, 26642 (May 13, 1998). The NRC considers these violations to be of significant concern, and may apply its full enforcement action to remedy these violations, including issuing appropriate orders. Id.

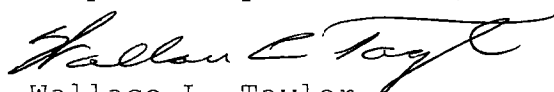
The NRC specifically limits its discretion to mitigate the enforcement sanctions where "the root cause of the event is obvious or the licensee had prior opportunity to identify the problem but failed to take action that would have prevented the event." Id.

Based on the foregoing in relation to the events surrounding the history of OPPD's mismanagement at Fort Calhoun, the NRC must exercise its authority to revoke OPPD's license to operate the plant.

CONCLUSION

Since at least 1992 OPPD has been unable and unwilling to operate Fort Calhoun properly and safely. It has failed to correct problems that were identified years ago. It has resisted directives from the NRC regarding safety violations. Based on the evidence, there is no likelihood that OPPD will ever be able or willing to operate Fort Calhoun properly and safely. Therefore, the NRC should revoke OPPD's license to operate Fort Calhoun.

Respectfully Submitted,



Wallace L. Taylor
Legal Counsel
Sierra Club Iowa Chapter

NRC FORM 253
(9-96)

U.S. NUCLEAR REGULATORY COMMISSION

DATE OF REQUEST

CONTROL NUMBER

MESSENGER/COURIER RECEIPT

6-26-12

TO:
William Borchardt

OFFICE
EDO

BUILDING
OWFN

ROOM NUMBER
16E15

FROM:
Sierra Club - Iowa Chapter

OFFICE
ADM

BUILDING
OWFN

ROOM NUMBER
P1-C10

DESCRIPTION
USPS certified envelope
7002-2410-0000-0463-7961

MESSENGER/COURIER SIGNATURE

MESSENGER/COURIER
MEC

DATE RECEIVED
6-26
TIME RECEIVED
1 PM

MESSENGER/COURIER

DATE RECEIVED
TIME RECEIVED

RECIPIENT'S SIGNATURE

RECIPIENT
Wallace

DATE RECEIVED
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TIME RECEIVED
8:42am

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NRC FORM 253 (9-96)

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Sierra Club Iowa Chapter
3839 Merle Hay Rd., Suite 280
Des Moines, Iowa 50310

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Mr. William Borchardt
Executive Director for Operations
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555