

October 3, 2008

D. Bannister

- 2 -

The basis for the NRC staff's conclusion is contained in the enclosed safety evaluation. If you have any questions, please contact Project Manager, Alan Wang, at 301-415-1445.

Sincerely,

/RA/

Eric J. Leeds, Director
Office of Nuclear Reactor Regulation

Docket No. 50-285

Enclosure:
Safety Evaluation

cc w/encl: See next page

DISTRIBUTION:

PUBLIC

LPLIV Reading

RidsAcrsAcnw MailCTR Resource

RidsNrrAdes Resource

RidsNrrAdro Resource

RidsNrrOd Resource

RidsNrrDorl Resource

RidsNrrDorlDpr Resource

RidsNrrDorlLpl4 Resource

RidsNrrLAJBurkhardt Resource

RidsNrrPMAWang Resource

RidsNrrPMREnnis Resource

RidsNsirDprDdep Resource

RidsOgcRp Resource

RidsRgn4MailCenter Resource

DJohnson, NSIR/DDEB/LIB/ORLT

ADAMS Accession No. ML082670196

* SE input memo

** Via email

OFFICE	NRR/LPL4/PM	NRR/LPL4/LA	NSIR/DDEB/LIB/BC *	OGC
NAME	AWang	JBurkhardt	KWilliams	DRoth NLO
DATE	09/26/08	09/26/08	09/22/08	09/26/08
OFFICE	TechEd **	NRR/DORL/LPL/BC	NRR/DORL/D	NRR/D B ²
NAME	HSpencer	MMarkley	JGitter	ELeeds
DATE	09/25/08	09/26/08	09/26/08	10/5/08

OFFICIAL RECORD COPY

D. Bannister

- 2 -

The basis for the NRC staff's conclusion is contained in the enclosed safety evaluation. If you have any questions, please contact me 301-415-1445.

Sincerely,

/RA/

Eric J. Leeds, Director
Office of Nuclear Reactor Regulation

Docket No. 50-285

Enclosure:
Safety Evaluation

cc w/encl: See next page

DISTRIBUTION:

PUBLIC

LPLIV Reading

RidsAcrsAcnw_MailCTR Resource

RidsNrrAdes Resource

RidsNrrAdro Resource

RidsNrrOd Resource

RidsNrrDorl Resource

RidsNrrDorlDpr Resource

RidsNrrDorlLpl4 Resource

RidsNrrLAJBurkhardt Resource

RidsNrrPMAWang Resource

RidsNrrPMREnnis Resource

RidsNsirDprDdep Resource

RidsOgcRp Resource

RidsRgn4MailCenter Resource

DJohnson, NSIR/DDEB/LIB/ORLT

ADAMS Accession No. ML082670196

* SE input memo

** Via email

OFFICE	NRR/LPL4/PM	NRR/LPL4/LA	NSIR/DDEB/LIB/BC *	OGC
NAME	AWang	JBurkhardt	KWilliams	DRoth NLO
DATE	09/26/08	09/26/08	09/22/08	09/26/08
OFFICE	TechEd **	NRR/DORL/LPL/BC	NRR/DORL/D	NRR/D B ^v
NAME	HSpencer	MMarkley	JGitter	ELeeds
DATE	09/25/08	09/26/08	09/26/08	10/ /08

OFFICIAL RECORD COPY

D. Bannister

- 2 -

The basis for the NRC staff's conclusion is contained in the enclosed safety evaluation. If you have any questions, please contact me 301-415-1445.

Sincerely,

Eric J. Leeds, Director
Office of Nuclear Reactor Regulation

Docket No. 50-285

Enclosure:
Safety Evaluation

cc w/encl: See next page

DISTRIBUTION:

PUBLIC

LPLIV Reading

RidsAcrsAcnw_MailCTR Resource

RidsNrrAdes Resource

RidsNrrAdro Resource

RidsNrrOd Resource

RidsNrrDorl Resource

RidsNrrDorlDpr Resource

RidsNrrDorlLpl4 Resource

RidsNrrLAJBurkhardt Resource

RidsNrrPMAWang Resource

RidsNrrPMREnnis Resource

RidsNsirDprDdep Resource

RidsOgcRp Resource

RidsRgn4MailCenter Resource

DJohnson, NSIR/DDEB/LIB/ORLT

ADAMS Accession No. ML082670196

(*) SE input memo (**) via e-mail

** Via email

OFFICE	NRR/LPL4/PM	NRR/LPL4/LA	NSIR/DDEB/LIB/BC *	OGC
NAME	AWang	JBurkhardt	KWilliams	DRoth NLO
DATE	09/26/08	09/26/08	09/22/08	09/26/08
OFFICE	TechEd **	NRR/DORL/LPL/BC	NRR/DORL/D	NRR/D
NAME	HSpencer	MMarkley	JGitter	ELeeds
DATE	09/25/08	09/26/08	09/26/08	10/ /08

OFFICIAL RECORD COPY

D. J. Bannister

- 2 -

The basis for the NRC staff's conclusion is contained in the enclosed safety evaluation. If you have any questions, please contact me 301-415-1445.

Sincerely,

Eric J. Leeds, Director
Office of Nuclear Reactor Regulation

Docket No. 50-285

Enclosure:
Safety Evaluation

cc w/encl: See next page

DISTRIBUTION:

PUBLIC
LPLIV Reading
RidsAcrsAcnw_MailCTR Resource
RidsNrrAdes Resource
RidsNrrAdro Resource
RidsNrrOd Resource
RidsNrrDorl Resource
RidsNrrDorlDpr Resource

RidsNrrDorlLpl4 Resource
RidsNrrLAJBurkhardt Resource
RidsNrrPMAWang Resource
RidsNrrPMREnnis Resource
RidsNsirDprDdep Resource
RidsOgcRp Resource
RidsRgn4MailCenter Resource
DJohnson, NSIR/DDEB/LIB/ORLT

ADAMS Accession No. ML082670196 (*) SE input memo (**) via e-mail

OFFICE	NRR/LPL4/PM	NRR/LPL4/LA	NSIR/DDEB/LIB/BC	OGC VLO
NAME	AWang <i>AW</i>	JBurkhardt <i>JB</i>	KWilliams <i>KW</i>	DRSTH
DATE	9/26/08	9/26/08	9/22/08	9/25/08
OFFICE	TechEd <i>TE</i>	NRR/DORL/LPL/BC	NRR/DORL/D	NRR/D
NAME	HSpencer <i>HS</i>	MMarkley <i>MM</i>	JGlitter <i>JG</i>	ELeeds
DATE	9/25/08	9/26/08	9/26/08	

OFFICIAL RECORD COPY

add encl to package

add date to Act...



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

October 3, 2008

Mr. David J. Bannister
Vice President and CNO
Omaha Public Power District
Fort Calhoun Station FC-2-4
Post Office Box 550
Fort Calhoun, NE 68023-0550

SUBJECT: FORT CALHOUN STATION, UNIT NO. 1—CONVERSION OF EMERGENCY ACTION LEVELS BASED ON NUCLEAR ENERGY INSTITUTE (NEI) 99-01, "METHODOLOGY FOR DEVELOPMENT OF EMERGENCY ACTION LEVELS" (TAC NO. MD5431)

Dear Mr. Bannister:

By application dated April 30, 2007 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML071370530), and supplemented by letters dated October 9, 2007, May 12, 2008, August 15, 2008, and September 11, 2008 (ADAMS Accession Nos. ML072980208, ML081340233, ML082320484, and ML082700453, respectively), Omaha Public Power District (the licensee), requested prior U.S. Nuclear Regulatory Commission (NRC) approval for proposed changes to the emergency action levels (EALs) for Fort Calhoun Station, Unit 1 (FCS).

The requested changes to the licensee's EALs support a conversion from its current EAL scheme to a scheme based on Nuclear Energy Institute (NEI) 99-01, "Methodology for Development of Emergency Action Levels," dated February 2008. FCS currently uses an EAL scheme based on NUREG-0654, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants."

The NRC reviewed the proposed changes to FCS's EALs and supporting documentation. The NRC staff determined that incorporation of the proposed changes meets the standards in Title 10 of the *Code of Federal Regulations* (10 CFR) Section 50.47(b), "Emergency Plans," and the requirements of Appendix E to 10 CFR Part 50, "Emergency Planning and Preparedness for Production and Utilization Facilities," and therefore, the requirement of 10 CFR 50.54(q) is met. The NRC determined that the proposed changes will 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 licensee's proposed changes to the EALs for FCS, as outlined in its application dated April 30, 2007, and supplemented by letters dated October 9, 2007, May 12, 2008, August 15, 2008, and September 11, 2008, are acceptable.

The licensee will implement the EALs as approved by the NRC (i.e., as provided in Attachment 2 of the licensee's letter dated August 15, 2008, which includes the implementation of the EAL Design Basis Document). If the licensee changes the EALs through 10 CFR 50.54(q) prior to implementation, the licensee must provide the changes to the NRC during the next emergency preparedness baseline inspection.

D. Bannister

- 2 -

The basis for the NRC staff's conclusion is contained in the enclosed safety evaluation. If you have any questions, please contact the Project Manager, Alan Wang, at 301-415-1445.

Sincerely,

A handwritten signature in black ink, appearing to read "Eric J. Leeds". The signature is fluid and cursive, with a large "E" and "L".

Eric J. Leeds, Director
Office of Nuclear Reactor Regulation

Docket No. 50-285

Enclosure:
Safety Evaluation

cc w/encl: See next page

D. Bannister

3

Ft. Calhoun Station, Unit 1

(9/15/2008)

cc:

Distribution via Listserv



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

SAFETY EVALUATION
BY THE OFFICE OF NUCLEAR REACTOR REGULATION
RELATED TO PROPOSED REVISIONS TO
THE EMERGENCY ACTION LEVELS FOR THE
FORT CALHOUN STATION, UNIT 1
OMAHA PUBLIC POWER DISTRICT
DOCKET NO. 50-285

1.0 INTRODUCTION

By application dated April 30, 2007 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML071370530), and supplemented by letters dated October 9, 2007, May 12, 2008, August 15, 2008, and September 11, 2008 (ADAMS Accession Nos. ML072980208, ML081340233, ML082320484, and ML082700453, respectively), Omaha Public Power District (OPPD, the licensee), requested prior U.S. Nuclear Regulatory Commission (NRC) approval for proposed changes to the emergency action levels (EALs) for Fort Calhoun Station, Unit 1 (FCS). The licensee's May 12, 2008, letter requested that the EALs be revised to the intent and wording of Nuclear Energy Institute (NEI) 99-01, Revision 5, "Methodology for Development of Emergency Action Levels," dated February 2008 (ADAMS Accession No. ML080450149).

The requested changes to the licensee's EALs support a conversion from the current EAL scheme to a scheme based on NEI 99-01, Revision 5. Henceforth, refer to NEI 99-01, Revision 5, dated February 2008, as NEI 99-01. FCS currently uses an EAL scheme based on NUREG-0654, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants."

2.0 REGULATORY EVALUATION

The NRC staff reviewed the proposed revision against the following regulations and guidance described below.

2.1 Regulations

Title 10 of the *Code of Federal Regulations* (10 CFR) Section 50.54, "Domestic Licensing of Production and Utilization Facilities," states that:

- (q) A holder of a nuclear power reactor operating license under this part ... shall follow and maintain in effect emergency plans which meet the requirements in appendix E of

Enclosure

this part. ... The nuclear power reactor licensee may make changes to these plans without Commission approval only if the changes do not decrease the effectiveness of the plans and the plans, as changed, continue to meet the standards of § 50.47(b) and the requirements of appendix E to this part. ... Proposed changes that decrease the effectiveness of the approved emergency plans may not be implemented without application to and approval by the Commission. The licensee shall submit, as specified in § 50.4, a report of each proposed change for approval. ...

Section 50.47 of 10 CFR Part 50, "Domestic Licensing of Production and Utilization Facilities," sets forth emergency plan requirements for nuclear power plant facilities. Section 50.47(b) of 10 CFR establishes the standards that the onsite and offsite emergency response plans must meet for NRC staff to make a positive finding that there is reasonable assurance that adequate protective measures can and will be taken in the event of a radiological emergency. One of these standards (10 CFR 50.47(b)(4)) states that:

A standard emergency classification and action level scheme, the bases of which include facility system and effluent parameters, is in use by the nuclear facility licensee, and State and local response plans call for reliance on information provided by facility licensees for determinations of minimum initial offsite response measures.

Section IV.B to 10 CFR Part 50 Appendix E, "Emergency Planning and Preparedness for Production and Utilization Facilities," states that emergency plans are to include EALs, which are to be used as criteria for determining the need for notification and participation of State and local agencies, the NRC and other Federal agencies. EALs are also used for determining when and what type of protective measures should be considered, both on and offsite, to protect public health and safety. EALs shall be based on in-plant conditions and instrumentation in addition to onsite and offsite monitoring. Section IV.B of 10 CFR Part 50 Appendix E requires that the EALs shall be reviewed with the State and local governmental authorities on an annual basis. Section IV.B of 10 CFR Part 50 Appendix E also states that:

A revision to the emergency action level must be approved by the NRC before implementation if: (1) the licensee is changing from one emergency action level scheme to another emergency action level scheme (e.g., a change from an emergency action level scheme based on NUREG-0654 to a scheme based on NUMARC/NESP-007 or NEI 99-01)...

2.2 Guidance

In a letter dated February 22, 2008, from Mr. Christopher Miller, NRC, to Mr. Alan Nelson, NEI, (ADAMS Accession No. ML080430535), the NRC staff concluded the guidance contained in NEI 99-01 is an acceptable alternative method to develop an EAL scheme that meets the requirements of in Section IV of Appendix E to 10 CFR Part 50 and 10 CFR 50.47(b)(4).

Regulatory Issue Summary (RIS) 2003-18 also provides guidance with Supplements 1 and 2, "Use of NEI 99-01, Methodology for Development of Emergency Action Levels" (ADAMS Accession Nos. ML032580518, ML041550395, and ML051450482, respectively). This RIS provides guidance for developing or changing a standard emergency classification and action level scheme. In addition, the RIS and supplements provide recommendations to assist

licensees, consistent with Section IV.B to Appendix E of Part 50, to determine whether to seek prior NRC approval of deviations from the guidance.

3.0 TECHNICAL EVALUATION

The proposed changes were submitted to the NRC for a technical and regulatory review prior to implementation by the licensee, as required under Section IV.B of Appendix E to 10 CFR Part 50. FCS currently uses an EAL scheme based on NUREG-0654, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants." The licensee is requesting to convert to an EAL scheme based on NEI 99-01. This evaluation is based on a revision to EALs provided in the licensee's application letter and supplemented by the licensee's responses to the NRC's requests for additional information.

In its application and supplemental letters, the licensee submitted the proposed EALs for the FCS, their technical basis, a comparison matrix, the EAL numbering scheme, and an explanation for any difference or deviation from NEI 99-01. The comparison matrix provided a cross-reference relating the proposed EAL scheme to the EALs in NEI 99-01. The NRC staff has reviewed the technical basis for the proposed EALs, the differences or deviations from NEI 99-01, and the licensee's justifications.

Therefore, the NRC staff reviewed the proposed EALs against the guidance in NEI 99-01 to determine if the EALs for FCS, as provided in its application and supplemental letters, meet the guidelines in that document. The following NEI 99-01 guidelines were among those considered in the NRC staff review:

- consistency (i.e., the EALs would lead to similar decisions under similar circumstances at different plants);
- human engineering and user friendliness;
- potential for classification upgrade only when there is an increasing threat to public health and safety;
- ease of upgrading and downgrading;
- thoroughness in addressing and disposing of the issues of completeness and accuracy raised regarding Appendix 1 to NUREG-0654;
- technical completeness for each classification level;
- logical progression in classification for multiple events;
- objective, observable values.

The NRC staff reviewed the proposed EALs and has determined that the proposed EALs are consistent with EALs implemented at similar designed plants, use objective and observable values, and are consistent with the intent of NEI 99-01.

The NRC staff reviewed the proposed EALs to determine if the proposed EALs are worded in a manner that addresses human engineering and user friendliness concerns. The proposed EALs uses language consistent with the above, including specific tag numbers for instrument readings and alarms; flow charts, critical safety function status trees, check lists, and combinations of the above. Based on this review, the NRC staff has determined that the proposed EALs meet the guidelines in NEI 99-01 in this area.

The NRC staff reviewed the proposed EAL sets. (An EAL set is a group of EALs within a category related to a common concern. For example, the unusual event, alert, site area emergency, and general emergency related to a failure of the plant to shutdown through an automatic scram would be considered an EAL set.) The NRC has determined that EAL set classification upgrades are based upon an increasing threat to public health and safety, can effectively support upgrading and downgrading, and follow a logical progression for multiple events. Based on this review, the NRC staff concludes that the EALs comply with the intent of NEI 99-01 in these areas.

The NRC staff also reviewed the proposed EALs for technical completeness and accuracy for each classification level. The proposed EALs are based on risk assessment to set the boundaries of the emergency classification levels and assure that all EALs that trigger that emergency classification are in the same range of relative risk. Precursor conditions of more serious emergencies also represent a potential risk to the public and are appropriately classified. The NRC staff has concluded that the proposed EALs are consistent with NEI 99-01, and are an acceptable alternative to EALs based on NUREG-0654, Appendix 1.

Based on its review of the proposed EALs, the NRC staff concludes that these EALs meet the guidelines in NEI 99-01 for all of the areas listed above. The NRC staff further concludes that the licensee converted the EALs consistent with the methodology in NEI 99-01, the revised EALs meet the standards of 10 CFR 50.47 and Appendix E, and therefore, the requirement of 10 CFR 50.54(q) is met.

4.0 CONCLUSION

The NRC staff performed a technical and regulatory review of the proposed changes to the Fort Calhoun Station EALs. The NRC staff has determined that the proposed changes meet the guidelines in NEI 99-01, for development of an EAL scheme that meets the regulatory requirements. Based on this, the NRC staff concludes that the proposed EALs meet the standards in 10 CFR 50.47(b) and the requirements in Appendix E to 10 CFR Part 50 and provide reasonable assurance that the licensee will take adequate protective measures in a radiological emergency and, therefore, 10 CFR 50.54(q) is met. Based on this conclusion, the NRC staff determines that the proposed EAL changes are acceptable.

5.0 REFERENCES

1. Letter from OPPD to the NRC, "Request for Approval to Change Fort Calhoun Station's Unit No. 1 Emergency Action Level (EAL) Scheme to NEI 99-01 Revision 4," dated April 30, 2007 (ADAMS Accession No. ML071370530).

2. Letter from OPPD to the NRC, "Marked-Up Supplement to Request for Approval to Change Fort Calhoun Station's Unit No. 1 Emergency Action Level (EAL) Scheme to NEI 99-01 Revision 4," dated October 9, 2007 (ADAMS Accession No. ML072980208).
3. Letter from OPPD to the NRC, "Response to RAI Re: Request for Revision to the EAL Scheme," dated May 12, 2008 (ADAMS Accession No. ML081340233).
4. Letter from OPPD to the NRC, "Clarification Response to Request for Additional Information (RAI) Re: Request for Revision to the EAL Scheme for Fort Calhoun Station," dated August 15, 2008 (ADAMS Accession No. ML082320484).
5. Letter from OPPD to the NRC, "Supplement to Clarification Response to Request for Additional Information (RAI) Re: Request for Revision to the Emergency Action Level (EAL) Scheme for Fort Calhoun Station," dated September 11, 2008 (ADAMS Accession No. ML082700453).
6. NEI 99-01, Revision 5, "Methodology for Development of Emergency Action Levels," February 2008 (ADAMS Accession No. ML080450149).
7. Regulatory Issue Summary 2003-18, with Supplements 1 and 2, "Use of NEI 99-01, Methodology for Development of Emergency Action Levels," January 2003 (ADAMS Accession Nos. ML032580518, ML041550395, and ML051450482).
8. Regulatory Guide 1.101, Revision 4, "Emergency Planning and Preparedness for Nuclear Power Reactors," dated July 2003 (ADAMS Accession No. ML032020276).
9. NUREG-0654, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants" (ADAMS Accession No. ML040420012).
10. Letter from Christopher Miller, NRC, to Alan Nelson, NEI, "U.S. Nuclear Regulatory Commission Review and Endorsement of NEI 99-01, Revision 5, Dated February 2008," dated February 22, 2008 (ADAMS Accession No. ML080430535).

Principal Contributor: D. Johnson

Date: October 3, 2008