February 26, 2002

Mr. Gary Van Middlesworth
Site General Manager
Duane Arnold Energy Center
Nuclear Management Company, LLC
3277 DAEC Road
Palo, IA 52324-0351

SUBJECT: DUANE ARNOLD ENERGY CENTER - ISSUANCE OF AMENDMENT (TAC NO. MB2920)

Dear Mr. Van Middlesworth:

The U.S. Nuclear Regulatory Commission has issued the enclosed Amendment No. 245 to Facility Operating License No. DPR-49 for the Duane Arnold Energy Center. This amendment is in response to your application dated August 15, 2001.

The amendment extends the channel calibration surveillance frequency for the Automatic Depressurization System timers from 18 months to 24 months.

A copy of the safety evaluation is also enclosed. Notice of Issuance will be included in the Commission's next biweekly *Federal Register* notice.

Sincerely,

/RA/

Brenda L. Mozafari, Project Manager, Section 1
Project Directorate III
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket No. 50-331

Enclosures: 1. Amendment No. 245 to License No. DPR-49
2. Safety Evaluation

cc w/encls: See next page

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Duane Arnold Energy Center

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NUCLEAR MANAGEMENT COMPANY, LLC

DOCKET NO. 50-331

DUANE ARNOLD ENERGY CENTER

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 245
License No. DPR-49

1. The U.S. Nuclear Regulatory Commission (the Commission) has found that:

   A. The application for amendment by Nuclear Management Company dated, August 15, 2001, complies with the standards and requirements of the Atomic Energy Act of l954, as amended (the Act), and the Commission's rules and regulations set forth in 10 CFR Chapter I;

   B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;

   C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;

   D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and

   E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.

2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment and paragraph 2.C.(2) of Facility Operating License No. DPR-49 is hereby amended to read as follows:

(2) Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 245, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

3. The license amendment is effective as of the date of issuance and shall be implemented within 30 days of the date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

/RA/

William D. Reckley, Acting Chief, Section 1
Project Directorate III
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Attachment: Changes to the Technical Specifications

Date of Issuance: February 26, 2002

ATTACHMENT TO LICENSE AMENDMENT NO. 245

FACILITY OPERATING LICENSE NO. DPR-49

DOCKET NO. 50-331

Replace the following pages of the Appendix A Technical Specifications with the attached revised pages. The revised pages are identified by amendment number and contain marginal lines indicating the areas of change.

Remove	Insert
Page 3.3-44	Page 3.3-44
Page 3.3-45	Page 3.3-45

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 245 TO FACILITY OPERATING LICENSE NO. DPR-49

NUCLEAR MANAGEMENT COMPANY, LLC

DUANE ARNOLD ENERGY CENTER

DOCKET NO. 50-331

1.0 INTRODUCTION

By application dated August 15, 2001, Nuclear Management Company (NMC) submitted a request to amend Facility Operating License DPR-49 for the Duane Arnold Energy Center (DAEC) to amend the Technical Specifications (TS) to extend the channel calibration surveillance frequency for the ADS timers from 18 months to 24 months, in order to facilitate a change to the DAEC operating cycle from 18 months to 24 months. The DAEC TS surveillance requirements (SR) currently specify that the automatic depressurization system (ADS) timer CHANNEL CALIBRATION surveillance (SR 3.3.5.1.7 in conjunction with Table 3.3.5.1-1, functions 4.b and 5.b) are to be performed at a frequency of 18 months.

2.0 BACKGROUND

Currently, the DAEC TS require that the ADS timer channel calibration surveillance shall be performed every 18 months. NMC proposes to revise the SRs to specify a 24-month surveillance interval in SR 3.3.5.1.7, in conjunction with Table 3.3.5.1-1, functions 4.b and 5.b. Increasing the ADS timer channel calibration surveillance frequency to 24 months would facilitate lengthening the DAEC operating cycle from 18 months to 24 months.

Generic Letter 91-04, “Changes in Technical Specification Surveillance Intervals to Accommodate a 24-Month Fuel Cycle” provides guidance for making changes of this kind. The proposed change in the ADS timer channel calibration surveillance frequency is similar to other surveillance interval changes made during DAEC’s conversion to Improved Technical Specifications via Amendment 223.

3.0 EVALUATION

The proposed amendment extends the CHANNEL CALIBRATION surveillance frequency for the ADS timers from 18 months to 24 months, in order to facilitate a change to the DAEC operating cycle from 18 months to 24 months.

Enclosure 2 of Generic Letter 91-04, “Changes in Technical Specification Surveillance Intervals to Accommodate a 24-Month Fuel Cycle”, specifies seven aspects to be addressed by

licensees who intend to lengthen their TS surveillance intervals to 24 months. NMC has addressed each of these items for the DAEC facility.

1. Confirm that instrument drift as determined by as-found and as-left calibration data from surveillance and maintenance records has not, except on rare occasions, exceeded acceptable limits for a calibration interval.

   The licensee has reviewed calibration data in the DAEC Instrument Trending Program (ITP) for the ADS timers (KS4400A/B). The ITP data were obtained from the appropriate Surveillance Test Procedures (STP) or maintenance procedure. For these timers, the data were taken from an STP using calibrated measuring and test equipment (M&TE), including the as-found and as-left data for the last eight calibrations for each timer. The data indicate that the as-found setpoint has not exceeded the Technical Specifications Allowable Value (AV) of 125 seconds during the last eight calibrations for any of the timers.

   The maintenance history for these timers includes one failed relay, which was discovered during a quarterly functional check of the ADS system.

   The staff agrees that the licensee's application indicates that instrument drift for the ADS timers, as determined by as-found and as-left calibration data from surveillance and maintenance records, has not, except on rare occasions, exceeded acceptable limits for a calibration interval.

2. Confirm that the values of drift for each instrument type (make, model, and range) and application have been determined with a high probability and a high degree of confidence. Provide a summary of the methodology and assumptions used to determine the rate of instrument drift with time based upon historical plant calibration data.

   The licensee determined the drift by calculating the standard deviation of the observed-in-service-difference (OISD) for a particular surveillance interval. The OISD is the difference between as-left value, from a previous calibration, and the as-found value of the following calibration. The licensee defined the drift value as the OISD. The OISD includes instrument accuracy and calibration accuracy as well as drift. The licensee noted that the calibration interval for the ADS timers was changed from 12 to 18 months in 1995, and that this increase in calibration interval had not resulted in a corresponding increase in the OISD.

   The staff agrees that the licensee has adequately determined the drift value, as indicated by the OISD, for each ADS timer.

3. Confirm that the magnitude of instrument drift has been determined with a high probability and a high degree of confidence for a bounding calibration interval of 30 months for each instrument type (make, model number, and range) and application that performs a safety function. Provide a list of the channels by TS section that identifies these instrument applications.

The licensee applied approved General Electric Company (GE) setpoint methodology to determine the drift value for a 30-month calibration interval. According to the GE setpoint methodology, the drift for the 30-month interval can be calculated by scaling up the known drift for a given or reference calibration interval. The scaling factor used is the square root of the longer interval divided by the reference interval. Since the standard deviation for a 12-month interval in the DAEC plant is greater than that for 18 months, the licensee chose the 12-month interval as the reference in calculating the drift for the 30-month interval. The resulting drift for a 30-month interval is 2.4 seconds. The licensee indicates, in the August 15, 2001, application, that the probability of finding the setpoint within the AV for a 30-month calibration interval would be 98.2 percent.

The staff agrees that instrument drift for the ADS timers has been determined with a high degree of confidence for a bounding calibration interval of 30 months.

4. Confirm that a comparison of the projected instrument drift errors has been made with the values of drift used in the setpoint analysis. If this results in revised setpoints to accommodate larger drift errors, provide proposed TS changes to update trip setpoints. If the drift errors result in a revised safety analysis to support existing setpoints, provide a summary of the updated analysis conclusions to confirm that safety limits and safety analysis assumptions are not exceeded.

   The licensee asserts, in the application dated August 15, 2001, that the settings for the ADS delay timers to such levels of precision are not critical to plant safety based upon information in NEDO-10139, Emergency Operating Procedures that direct operators to reset the ADS timers early in an event, and the margin to peak cladding temperature evident in the DAEC loss-of-coolant accident analysis. Therefore, the licensee did not perform a safety analysis or comparison.

   The staff agrees that a safety analysis would not be applicable in this instance, since precise settings for the ADS timers are not critical to plant safety, based upon information in NEDO-10139.

5. Confirm that the projected instrument errors caused by drift are acceptable for control of plant parameters to effect a safe shutdown with the associated instrumentation.

   As indicated in the licensee's response to the previous item, precise setting of the ADS delay timers is not critical to plant safety. Furthermore, the licensee notes that the ADS timer setpoints are not likely to drift beyond the TS AV.

   The staff agrees that ADS timer setpoints, of high precision, are not critical to plant safety, and the setpoints are not likely to drift outside the TS AV.

6. Confirm that all conditions and assumptions of the setpoint and safety analyses have been checked and are appropriately reflected in the acceptance criteria of plant surveillance procedures for channel checks, channel functional tests, and channel calibrations.

The licensee has indicated that Item 6 is not applicable, since the predicted drift, due to the lengthening of the results of calibration interval will not require changes to the AV or calibration data.

The staff agrees that Item 6 is not applicable for the ADS timer settings.

7. Provide a summary description of the program for monitoring and assessing the effects of increased calibration surveillance intervals on instrument drift and its effect on safety.

The summary, provided in the licensee's application, refers to STP 3.3.5.1-16 for the monitoring of the ADS timers for instrument drift through surveillance calibrations. The ITP uses input from the STPs to track performance of selected plant instrumentation, including the ADS timers. DAEC's programs to assess instrument performance - the ITP and the Action Request programs are intended to identify any negative trend in the performance of the ADS timers and ensure that the appropriate actions are taken and documented.

3.1 Evaluation Results

The staff agrees that DAEC has adequately addressed the issues important to extending the channel calibration surveillance frequency for the ADS timers from 18 months to 24 months, as outlined by the seven items specified in Generic Letter 91-04. DAEC has shown that lengthening the subject channel calibration surveillance interval by 6 months would not be likely to result in any setpoint drift beyond the allowable limits.

4.0 STATE CONSULTATION

In accordance with the Commission's regulations, the Iowa State official was notified of the proposed issuance of the amendment. The State official had no comments.

5.0 ENVIRONMENTAL CONSIDERATIONS

This amendment changes surveillance requirements. The staff has determined that the amendment involves no significant increase in the amounts and no significant change in the types, of any effluent that may be released offsite, and that there is no significant increase in individual or cumulative occupational radiation exposure. The Commission has previously issued a proposed finding that the amendment involves no significant hazards consideration and there has been no public comment on such finding (66 FR 50469). Accordingly, the amendment meets the eligility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need to be prepared in connection with the issuance of the amendment.

6.0 CONCLUSION

The Commission 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) such activities will be conducted in compliance with the

Commission's regulations, and (3) the issuance of the amendment will not be inimical to the common defense and security or to the health and safety of the public.

Principal Contributor: S. Miranda

Date: February 26, 2002