April 15, 2003
NG-03-0313

10 CFR 50.90
10 CFR 50.91(a)(5)

Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
Attn: Document Control Desk
Mail Station 0-P1-17
Washington, DC 20555-0001

Subject: Duane Arnold Energy Center
Docket No: 50-331
Op. License No: DPR-49
Response to Request for Additional Information (RAI) on Technical Specification Change Request (TSCR-063): "Addition of Limiting Condition for Operation (LCO) 3.0.4 Exception to Condition A to LCO 3.7.5, Control Building Chiller System"

Reference: Letter, M. Peifer (NMC) to USNRC, "Technical Specification Change Request (TSCR-063): "Addition of Limiting Condition for Operation (LCO) 3.0.4 Exception to Condition A to LCO 3.7.5, Control Building Chiller System," NG-03-0308, April 14, 2003.

File: A-117

In the referenced letter, Nuclear Management Company, LLC (NMC) requested a revision to the Technical Specifications (TS) for the Duane Arnold Energy Center (DAEC). Specifically, NMC is requesting a temporary allowance to deviate from the requirements of Limiting Condition for Operation (LCO) 3.0.4, for the condition of one Control Building Chiller subsystem being inoperable (i.e., LCO 3.7.5, Condition A). This TS change is being requested pursuant to 10 CFR 50.91(a)(5) as an "emergency" change to preclude unnecessary delays in startup from the current refueling outage.

In a telephone conference on April 15, 2003, the Staff requested that additional information be provided to assist them with the review of our application. The Attachment to this letter contains the Staff's questions and our responses. The new information is of a clarifying nature and does not materially alter the 10 CFR 50.92 evaluation submitted with the referenced submittal.

Also, during this telephone conference, the Staff asked us to clarify our commitment on not moving irradiated fuel assemblies within the secondary containment for the duration of the requested temporary allowance. We did not intend to preclude this activity if the power plant was not utilizing the temporary allowance; that is, not operating in Modes 1, 2 or 3. Although it is unlikely to be necessary, to allow for the contingency to re-enter Mode 5 (Refuel) and move irradiated fuel assemblies within the secondary containment and/or perform Core Alterations, our prior commitment is hereby modified as follows:

For the duration of this temporary TS allowance, NMC commits to not moving irradiated fuel assemblies (or portions thereof) within the secondary containment, except as part of performing/supporting Core Alterations in Mode 5 (Refuel).

This letter is true and accurate to the best of my knowledge and belief.

Nuclear Management Company, LLC

By _____
Mark Peifer
DAEC Site Vice President

State of Iowa
(County) of Linn

Signed and sworn to before me on this 15th day of April, 2003,

by MARK PEIFER.

Kathleen M. Furman
Notary Public in and for the State of Iowa

KATHLEEN M. FURMAN
Commission Number 199226
MY COMMISSION EXPIRES
11-3-2004

Nov. 3, 2004
Commission Expires

Attachment: Response to Staff Request for Additional Information

cc: R. Browning (w/a)
D. Hood (NRC-NRR) (w/a)
J. Dyer (Region III) (w/a)
D. McGhee (State of Iowa) (w/a)
NRC Resident Office (w/a)
IRMS (w/a)

Response to Staff Request for Additional Information

Question 1: Provide the actual date of the failure of the "A" Control Building Chiller and the current estimated date for restoration of its Operability?

DAEC Response: The "A" Control Building Chiller experienced the motor failure on April 12, 2003, at approximately 1:30 AM. Our current estimate for its restoration to Operability is April 21, 2003.

Question 2: Does the DAEC have a PRA model for plant shutdown? If not, Please elaborate on the cited Boiling Water Reactor (BWR) Owners' Group (BWROG) study that evaluated the transitional risk of starting up from Mode 4 to full power (Mode 1) and its applicability to the DAEC for this case?

DAEC Response: No, the DAEC does not have a "shutdown" PRA model. In our original submittal, a topical report (GE-NE A13-00464-02) was cited as supporting the DAEC TS request. That study was specifically done to identify any "high risk" systems, structures and components during the transition from shutdown through startup to power operation, while relying on the TS Actions for inoperable equipment; that is, scenarios similar to the current DAEC situation. That study utilized a PRA model of a "generic" BWR, which is similar in design to the DAEC. That model is capable of analyzing transitional risk through the various operating Modes from cold shutdown to power operation. That study did not identify the control building cooling system, i.e., the Chillers at DAEC, as a "high risk" system for Full Power Operation (Mode 1), just as the DAEC's PRA model concluded. Therefore, we believe that the conclusion of acceptable transition risk in that BWROG study applies to the DAEC as well.

Question 3: In the Safety Assessment, you cited from your UFSAR, Section 9.4, that you could establish alternate ventilation in the case of the loss of control building air conditioning. Is the establishment of such an alternate ventilation path proceduralized? What condition(s) cause these alternate cooling modes to be used? And, will the equipment being relied upon be available during the time period of this temporary TS allowance?

DAEC Response: Yes, The Annunicator Response Procedure (ARP) for the loss of a Control Building Chiller provides the initial actions to establish alternate cooling/ventilation. It also directs entry into the Abnormal Operating Procedures (AOPs) developed for fire protection, which discuss the establishment of the additional alternate ventilation in the

Response to Staff Request for Additional Information

DAEC Response to Question 3 (cont.):

Control Building areas if the initial actions are not successful in keeping the area temperatures within limits. These additional actions include the blocking open of doors and the use of auxiliary ventilation equipment. Because this ventilation equipment is relied upon in our Fire Protection Program, it is maintained in a readiness condition and will be available, if needed, during the duration of this temporary allowance.

Question 4: Provide more detail regarding the room heatup calculations during high ambient conditions discussed in the Safety Assessment. Also, what are the forecasted temperature conditions for the next week?

DAEC Response: In our original submittal, we referred to realistic room heat-up evaluations that were used as input to the PRA to develop success criteria for the Control Building Chillers. To clarify, those evaluations were based upon engineering judgment, which made use of existing design basis calculations.

In response to the Staff's question, we performed an evaluation to validate those PRA inputs. This evaluation makes use of one of those existing design basis calculations; specifically, a calculation of room heatup in the Essential Switchgear Rooms, which are part of the Control Building boundary and are normally cooled by the Control Building Chillers.

That design basis calculation assumes an ambient temperature of 91°F and an initial room temperature of 85°F. The analysis also takes credit for heat sinks (i.e., losses through the available surface area of walls and floor), and utilizes the normal ventilation flowrate of 3000 cfm. It should be noted that these calculations conservatively assumed that the doors in these rooms were closed, notwithstanding our procedures to open them to improve cooling (see Response to Question 3).

When we extrapolate this case to assume an ambient condition of 100°F, with all the other assumptions the same, the results of this evaluation support the original PRA inputs that the room stays below the 125°F criterion for 24 hours.

Response to Staff Request for Additional Information

DAEC Response to Question 4 (cont.):

The following is the 7-day weather forecast for the local area.

Date	High Temperature	Low Temperature
Wed. 4/16	67°F	37°F
Thurs. 4/17	48°F	29°F
Fri. 4/18	58°F	40°F
Sat. 4/19	61°F	41°F
Sun. 4/20	43°F	41°F
Mon. 4/21	54°F	38°F
Tues. 4/22	63°F	38°F

Question 5: What compensatory measures are being taken to protect the remaining available Control Building Chiller? Please include controls on the establishment of the Control Building boundary prior to entering plant startup (Mode 2)?

DAEC Response: We will establish controls, as part of the plant "startup package" to ensure that the "B" Control Building Chiller and its necessary support systems (e.g., "B" Diesel Generator) are "protected" to preclude any work activities (maintenance, testing, etc.) from being performed that would jeopardize its Operability, until the "A" Control Building Chiller is restored to Operable status.

Also, TS Limiting Condition for Operation (LCO) 3.7.4, Standby Filter Unit System, requires the establishment of the Control Building boundary as part of Operability of this system. Because LCO 3.7.4 is subject to the restrictions of LCO 3.0.4, the boundary must be established prior to entering the Mode of Applicability of the LCO; in particular, Modes 1, 2 or 3.