

April 14, 2003  
NG-03-0308

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  
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: Federal Register Notice (68 FR 16579) Notice of Availability of Model  
Application Concerning Technical Specification Improvement to Modify  
Requirements Regarding Mode Change Limitations Using the  
Consolidated Line Item Improvement Process, April 4, 2003.

File: A-117

In accordance with the Code of Federal Regulations, Title 10, Sections 50.59 and 50.90, Nuclear Management Company, LLC (NMC) hereby requests revision to the Technical Specifications (TS) for the Duane Arnold Energy Center (DAEC). Specifically, NMC is requesting an 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 allowance would permit entry into the LCO Applicability while relying upon the LCO Actions for the duration of the existing Completion Time of that LCO Action. The requested allowance to LCO 3.0.4 is sought as a temporary change only, which will expire on May 16, 2003, 30 days after our planned entry into Mode 2 from Mode 4 on April 16, 2003. The 30 days corresponds to the Completion Time of LCO 3.7.5, Condition A and represents the maximum time that the allowance can be utilized.

During normal operation, including plant shutdown conditions, one Control Building Chiller (CBC) is in operation in support of Control Building Heating, Ventilation and Air-Conditioning (HVAC) operation. The DAEC is currently shutdown for a planned refueling outage. The reactor currently is in Mode 4 (Cold Shutdown), preparing to enter Mode 2 (Startup). In preparation for required testing (Technical Specification (TS) Surveillance Requirement (SR) 3.8.1.13), the operating CBC subsystem was being transferred from the "B" to the "A" subsystem. During the initial startup transient of the "A" Chiller, the compressor motor experienced a destructive failure.

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Insulation resistance data taken on-site shortly after the failure occurred, found that the motor windings registered very low values of resistance, confirming that the motor windings had internally grounded. Subsequent investigation at the repair facility indicated that a stator winding failure was found on one coil at the end of the motor. A review of the maintenance history of this motor indicates that it had been refurbished in 1992, and its preventive maintenance records (insulation resistance data) did not show signs of degradation, which would have indicated this failure was imminent.

Due to the unique design of this motor (dual speed), a suitable replacement has not been found and the only practical alternative is to repair the existing motor. The current estimates for repair of the motor and its re-installation is beyond the current estimate for plant startup from this refueling outage. Consequently, plant startup will be delayed pending restoration of this CBC subsystem, absent relief from the TS requirements of LCO 3.0.4.

Therefore, this TS change is being requested pursuant to 10 CFR 50.91(a)(5) as an "emergency" change, as sufficient time is not available before the planned startup to allow for the use of the exigency provisions of 10 CFR 50.91.

Because TS SR 3.8.1.13 is performed at the end of the refueling outage just prior to startup, after systems are restored from maintenance, coupled with the maintenance history that did not indicate degradation in the motor performance, NMC could not have prevented this emergency situation from occurring.

In the last 10 years, the DAEC has only requested one other exigent or emergency TS change request (Amendment 225, January, 1999) and only 3 Notices of Enforcement Discretion (NOED) in the life of the plant. Thus, the DAEC does not routinely rely upon these provisions of the regulation for relief from TS requirements.

NMC believes there is acceptable risk to the public health and safety by allowing plant startup with the "A" Control Building Chiller inoperable versus remaining shutdown pending completion of repairs. The attachments to this letter provide the information to support this conclusion.

In addition, the Staff has recently approved a generic Consolidated Line Item Improvement Process (CLIIP) change to the Standard TS (Reference), which would grant the same LCO 3.0.4 allowance to TS LCO 3.7.5 as being requested here as a single line item. Although the NMC is not requesting the referenced change in this application, the justification provided in the CLIIP is applicable to our requested change.

This application has been reviewed by the DAEC Operations Committee. A copy of this submittal, along with the 10 CFR 50.92 evaluation, is being forwarded to our appointed state official pursuant to 10 CFR Section 50.91.

The following new commitment is being made in this letter:

For the duration of this temporary TS allowance, NMC commits to not moving irradiated fuel assemblies (or portions thereof) within the secondary containment.

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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 14<sup>th</sup> day of April, 2003,

by Mark Peifer.

Nancy S. Franck  
Notary Public In and for the State of Iowa



Attachments:

1. Evaluation of Change Pursuant to 10 CFR Section 50.92
2. Proposed Change TSCR-063 to the Duane Arnold Energy Center Technical Specifications
3. Safety Assessment
4. Environmental Consideration

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)

EVALUATION OF CHANGE PURSUANT TO 10 CFR SECTION 50.92

Background:

During normal operation, including plant shutdown conditions, one Control Building Chiller (CBC) is in operation in support of Control Building Heating, Ventilation and Air-Conditioning (HVAC) operation. The plant is currently shutdown for a planned refueling outage. The reactor currently is in Mode 4 (Cold Shutdown), preparing to enter Mode 2 (Startup). In preparation for required testing (Technical Specification (TS) Surveillance Requirement (SR) 3.8.1.13) the operating CBC subsystem was being transferred from the "B" to the "A" CBC subsystem. During the initial startup transient of the "A" Chiller, the compressor motor experienced a destructive failure. This motor is a two speed (200 HP/75 HP) Y-Delta 480 VAC induction motor with a random wound stator.

Insulation resistance (Megger) data taken shortly after the failure occurred, found that the motor windings registered very low values of resistance, confirming that the motor windings had internally grounded. Subsequent investigation at the repair facility indicated that a stator winding failure was found on one coil at the end of the motor. A review of the maintenance history of this motor indicates that it had been refurbished in 1992, and its preventive maintenance records (Megger data) did not show signs of degradation, which would have indicated this failure was imminent.

Due to the unique design of this motor (dual speed), a suitable replacement has not been found and the only practical alternative is to repair the existing motor. The current estimate for repair of the motor and its re-installation is beyond the current estimate for plant startup from this refueling outage. Consequently, plant startup will be delayed pending restoration of this CBC subsystem, absent relief from the TS requirements of Limiting Condition for Operation 3.0.4.

Therefore, this TS change is being requested pursuant to 10 CFR 50.91(a)(5) as an "emergency" change, as sufficient time is not available before the planned startup to allow for the use of the exigency provisions of 10 CFR 50.91. Because TS SR 3.8.1.13 is performed at the end of the refueling outage just prior to startup, after systems are restored from maintenance, coupled with the maintenance history that did not indicate a degradation in the motor performance, NMC could not have prevented this emergency situation from occurring.

In the last 10 years, the DAEC has only requested one other exigent or emergency TS change request (Amendment 225, 1999) and only 3 Notices of Enforcement Discretion (NOED) in the life of the plant. Thus, the DAEC does not routinely rely upon these provisions of the regulation for relief from TS requirements.

Nuclear Management Company, LLC, Docket No. 50-331,  
Duane Arnold Energy Center, Linn County, Iowa  
Date of Amendment Request: April 14, 2003

Description of Amendment Request:

Existing Technical Specification (TS) Limiting Condition for Operation (LCO) 3.0.4 prohibits changes in Mode that are a part of unit startup, or entry into any other specified condition in the LCO Applicability, from being made when relying upon the Conditions and Required Actions of that LCO, unless the LCO Actions permit operation in that Mode or other specified condition in the Applicability (MOSCA) of the LCO for an indefinite time period, or when the Condition is specifically exempted from LCO 3.0.4.

The proposed change will add a Note to Required Action A.1 of LCO 3.7.5, Control Building Chiller (CBC) System to specifically exempt this Condition from the requirements of LCO 3.0.4. Thus, the MOSCA of this LCO may be entered with one CBC subsystem inoperable. However, such an entry will continue to require that the subsystem be restored to Operable status within the existing Completion Time of 30 days. This Note is annotated to indicate that this is a temporary allowance, which will expire on May 16, 2003, 30 days after our planned entry into Mode 2 from Mode 4. The 30 days corresponds to the Completion Time of LCO 3.7.5, Condition A and represents the maximum time that the allowance can be utilized. In addition, NMC has committed to not utilizing this exception to allow the movement of irradiated fuel assemblies (or portions thereof) within the secondary containment during this 30 day period.

This proposed change is similar to those that currently exist in the DAEC TS, as well as other plants' TS, and are typically associated with those Actions that have Completion Times of 30 days or longer. For example in the DAEC TS, LCO 3.7.1, Residual Heat Removal Service Water (RHRSW) System, which allows Modes 1, 2 or 3 to be entered with one RHRSW subsystem inoperable (Condition A), which also has a 30 day Completion Time. Completion Times of 30 days or greater are generally assigned to Systems, Structures or Components (SSCs) in the TS that have low safety significance and/or sufficient redundancy that a single pump/train/subsystem out of service does not represent a significant degradation in safety. This allowance is based upon the low risk of an event requiring the affected system to be able to mitigate that event during the Completion Time.

Basis for proposed No Significant Hazards Consideration:

The Commission has provided standards (10 CFR Section 50.92(c)) for determining whether a significant hazards consideration exists. A proposed amendment to an operating license for a facility involves no significant hazards consideration if operation of the facility in accordance with the proposed amendment would not (1) involve a

significant increase in the probability or consequences of an accident previously evaluated; or (2) create the possibility of a new or different kind of accident from any accident previously evaluated; or (3) involve a significant reduction in a margin of safety.

After reviewing this proposed amendment, NMC has concluded:

- 1) The proposed amendment will not involve a significant increase in the probability or consequences of an accident previously evaluated.

The proposed change allows entry into the MOSCA of TS LCO 3.7.5, while in a TS Condition statement (Condition A) and the associated Required Action of that TS. Being in a TS Condition and the associated Required Actions is not an initiator of any accident previously evaluated. Therefore, the probability of an accident previously evaluated is not significantly increased.

The consequences of an accident while relying on Required Actions as allowed by the proposed LCO 3.0.4 exclusion Note, are no different than the consequences of an accident while entering and relying on the Required Actions while starting in a condition of Applicability of the TS. That is, the risk associated with starting up the power plant with one inoperable CBC subsystem inoperable is not significantly different than operating the power plant at full power in the same condition for the allowed Completion Time of 30 days. This is also applicable to the other specified conditions within the LCO, (e.g., moving irradiated fuel assemblies within the secondary containment), which are bounded by the design basis accident during power operation, i.e., Loss-of-Coolant Accident (LOCA). (Note: NMC has committed to not moving irradiated fuel assemblies (or portions thereof) within the secondary containment for the duration of this temporary allowance.) Therefore, the consequences of an accident previously evaluated are not significantly affected by this change.

The proposed changes will not affect any other SSC designed for the mitigation of previously analyzed events. The proposed change does not affect the source term, containment isolation, or radiological release assumptions used in evaluating the radiological consequences of any accident previously evaluated.

Thus, the proposed change will not increase the consequences of any previously evaluated accident.

- 2) The proposed amendment will not create the possibility of a new or different kind of accident from any accident previously evaluated.

The proposed change does not involve a physical alteration of the plant (no new or different type of equipment will be installed). Entering into a MOSCA of a TS, while in a TS Condition statement and the associated Required Actions of the TS, will not introduce new failure modes or effects and will not, in the absence of other unrelated failures, lead

to an accident whose consequences exceed the consequences of accidents previously evaluated.

Therefore, the proposed changes do not create the possibility of a new or different kind of accident from any previously evaluated.

- 3) The proposed amendment will not involve a significant reduction in a margin of safety.

The proposed change allows entry into a MOSCA of TS 3.7.5, while in a TS Condition statement and the associated Required Actions of that TS, i.e., Condition A of one CBC subsystem inoperable. The TS allow operation of the plant without the full complement of equipment through the Conditions for not meeting the TS LCO. The risk associated with this allowance is managed by the imposition of Required Actions that must be performed within the prescribed Completion Times. The net effect of being in a TS Condition on the margin of safety is not considered significant.

The proposed change does not alter the Required Actions or Completion Times of the current TS to restore the CBC subsystem to Operable status within 30 days, even with the allowed Mode change. The proposed change allows the TS Condition to be entered, and the associated Required Actions and Completion Times to be used in new circumstances, that is, during planned changes in Mode associated with a plant startup, as well as entry into the other specified conditions of the LCO Applicability. (Note: NMC has committed to not moving irradiated fuel assemblies (or portions thereof) within the secondary containment for the duration of this temporary allowance.) However, as discussed in the Bases for LCO 3.0.4, this allowance is to be used prudently and not relied upon routinely as an operational convenience. Thus, any use of the LCO 3.0.4 exemption is predicated upon the reasonable assurance of completion of the restoration of the inoperable equipment within the allowed Completion Time. In addition, sufficient equipment remains available to actuate upon demand for the purpose of mitigating an analyzed event, absent another independent single failure.

The CBC System is within the scope of the DAEC Maintenance Rule program (10 CFR 50.65). Thus, any planned maintenance on the CBC System would be coordinated for overall plant risk with other equipment maintenance or testing activities, per §50.65(a)(4). In addition, if an emergent situation occurs where one CBC subsystem becomes inoperable unexpectedly, the plant risk is reassessed and managed, as described in the industry guidance document for (a)(4), NUMARC 93-01, "Assessment of Risk Resulting from Performance of Maintenance Activities," as endorsed by NRC Regulatory Guide (RG) 1.182.

In addition, current TS LCO 3.0.6 will preclude any loss of safety function, either directly or indirectly as a result of the inoperability of a support system to the CBC System. And, LCO 3.7.5, Condition D does not permit continued operation in Modes 1, 2 or 3 with both subsystems of CBC inoperable; an LCO 3.0.3 shutdown action is immediately

entered upon reaching this Condition. Thus, the proposed change to allow startup with one CBC inoperable will not supercede these other requirements that preclude continued operation with a loss of safety function.

Thus, the proposed changes will not significantly reduce any margin of safety that currently exists.

Based upon the above, NMC has determined that the proposed amendment will not involve a significant hazards consideration.

Attorney for Licensee: Jonathan Rogoff, Esquire, General Counsel, NMC, LLC, 700 First St., Hudson, WI, 54016.

Proposed Change TSCR-063 to the Duane Arnold Energy Center  
Technical Specifications

The holders of license DPR-49 for the Duane Arnold Energy Center propose to amend the Technical Specifications (TS) by deleting the referenced page and replacing it with the enclosed new page. Both "pen & ink" markups of the existing TS page and the corresponding clean, typed revision is provided. The affected BASES page(s) will be updated during implementation of this amendment under TS 5.5.10, BASES Control Program. A "pen & ink" markup of the affected BASES page is provided for information only.

<u>Page</u>	<u>Description of Change</u>
3.7-11	Add a Note to Required Action A.1 that exempts the Condition from LCO 3.0.4 (i.e., a "LCO 3.0.4 is not applicable" Note). This Note is annotated to indicate that this allowance is temporary and will expire on May 16, 2003, 30 days after the planned entry into Mode 2 from Mode 4.
B 3.7-27	Add explanation to the BASES for Condition A.1 regarding the new "LCO 3.0.4 is not applicable" Note. The BASES will also explain the temporary nature of this allowance and NMC's commitment to not utilizing this allowance to move irradiated fuel assemblies (or portions thereof) within the secondary containment during this time period.

3.7 PLANT SYSTEMS

3.7.5 Control Building Chiller (CBC) System

LCO 3.7.5 Two CBC subsystems shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3,  
During movement of irradiated fuel assemblies in the  
secondary containment,  
During CORE ALTERATIONS,  
During Operations with a Potential for Draining the Reactor  
Vessel (OPDRVs).

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One CBC subsystem inoperable.	A.1 Restore CBC subsystem to OPERABLE status.	30 days
B. Required Action and associated Completion Time of Condition A not met in MODE 1, 2, or 3.	B.1 Be in MODE 3.	12 hours
	<u>AND</u> B.2 Be in MODE 4.	36 hours

(continued)

----- NOTE -----  
 LCO 3.0.4 is not  
 applicable.\*  
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\* This is a temporary allowance which expires on May 16, 2003.

3.7 PLANT SYSTEMS

3.7.5 Control Building Chiller (CBC) System

LCO 3.7.5 Two CBC subsystems shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3,  
During movement of irradiated fuel assemblies in the  
secondary containment,  
During CORE ALTERATIONS,  
During Operations with a Potential for Draining the Reactor  
Vessel (OPDRVs).

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One CBC subsystem inoperable.	A.1 -----NOTE----- LCO 3.0.4 is not applicable.* -----  Restore CBC subsystem to OPERABLE status.	30 days
B. Required Action and associated Completion Time of Condition A not met in MODE 1, 2, or 3.	B.1 Be in MODE 3.	12 hours
	<u>AND</u> B.2 Be in MODE 4.	36 hours

(continued)

\* This is a temporary allowance which expires on May 16, 2003.

BASES

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APPLICABILITY  
(continued)

- a. During Operations with a Potential for Draining the Reactor Vessel (OPDRVs);
  - b. During CORE ALTERATIONS; and
  - c. During movement of irradiated fuel assemblies in the secondary containment.
- 

ACTIONS

A.1

With one CBC subsystem inoperable, the inoperable CBC subsystem must be restored to OPERABLE status within 30 days. With the unit in this condition, the remaining OPERABLE CBC subsystem is adequate to perform the control building air conditioning function. However, the overall reliability is reduced because a single failure in the OPERABLE subsystem could result in loss of the control building air conditioning function. The 30 day Completion Time is based on the low probability of an event occurring requiring control building isolation, the consideration that the remaining subsystem can provide the required protection, and the availability of alternate cooling methods.

INSERT to  
Action A.1 →

B.1 and B.2

In MODE 1, 2, or 3, if the inoperable CBC subsystem cannot be restored to OPERABLE status within the associated Completion Time, the unit must be placed in a MODE that minimizes risk. To achieve this status, the unit must be placed in at least MODE 3 within 12 hours and in MODE 4 within 36 hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required unit conditions from full power conditions in an orderly manner and without challenging unit systems.

C.1, C.2.1, C.2.2, and C.2.3

LCO 3.0.3 is not applicable in MODE 4 or 5. However, since irradiated fuel assembly movement can occur in MODE 1, 2, or 3, the Required Actions of Condition C are modified by a Note indicating that LCO 3.0.3 does not apply. If moving

(continued)

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INSERT to Action A.1

Required Action A.1 has been modified by a Note that indicates that the provisions of LCO 3.0.4 are not applicable. As a result, a MODE change is allowed when one CBC subsystem is inoperable. This allowance is provided because of the low probability of an event occurring requiring control building isolation and the redundancy of the remaining portions of the system.

As annotated, this is a temporary allowance which will expire on May 16, 2003, 30 days after the planned entry into MODE 2 from MODE 4. The 30 days corresponds to the Completion Time of Condition A, and represents the maximum time that this allowance may be utilized.

## SAFETY ASSESSMENT

### 1.0 INTRODUCTION

By letter dated April 14, 2003, Nuclear Management Company, LLC, (NMC), proposed a change to the Technical Specifications (TS) for the Duane Arnold Energy Center (DAEC). The requested change is the addition of a Note to the Actions of Limiting Condition for Operation (LCO) 3.7.5, Control Building Chiller (CBC) System; specifically, to Required Action A.1 of Condition A (one CBC subsystem inoperable). This Note will specifically exempt this Condition from the limitations of LCO 3.0.4 and permit entering the Mode of Applicability of this LCO while relying upon this Action. Without this Note, LCO 3.0.4 would otherwise prohibit the Mode of Applicability from being entered without the entire system being Operable. This allowance is only temporary and will expire on May 16, 2003, 30 days after the planned entry into Mode 2 from Mode 4. The 30 days corresponds to the Completion Time of LCO 3.7.5, Condition A and represents the maximum time that the allowance can be utilized. In addition, NMC has committed to not utilizing this allowance to move irradiated fuel assemblies (or portions thereof) during the time period of this temporary allowance.

### 2.0 BACKGROUND

Existing TS LCO 3.0.4 prohibits changes in Mode that are a part of unit startup, or entry into any other specified condition in the LCO Applicability, from being made when relying upon the Conditions and Required Actions of that LCO, unless either the LCO Actions permits operation in that Mode or other specified condition in the Applicability (MOSCA) of the LCO for an indefinite time period; or, when the Condition is specifically exempted from LCO 3.0.4.

The proposed change will add a Note to Required Action A.1 of LCO 3.7.5, CBC System to specifically exempt this Condition from the requirements of LCO 3.0.4. Thus, the MOSCA of this LCO may be entered with one CBC subsystem inoperable. However, such an entry will continue to require that the subsystem be restored to Operable status within the existing Completion Time of 30 days. As noted above, this allowance is temporary.

This proposed change is similar to those that currently exist in the DAEC TS, as well as other plants' TS, and are typically associated with those Actions that have Completion Times of 30 days or longer. For example in the DAEC TS, LCO 3.7.1, Residual Heat Removal Service Water (RHRSW) System, which allows Modes 1, 2 or 3 to be entered with one RHRSW subsystem inoperable (Condition A), which also has a 30 day Completion Time.

### 3.0 EVALUATION

#### System Design:

The CBC System provides temperature control for the Control Building Heating, Ventilation and Air-Conditioning (HVAC) System under both normal and accident conditions. The system provides HVAC support to the main Control Room, safety-related Battery rooms and the Essential Switchgear Rooms.

The CBC System consists of two independent, redundant subsystems that provide cooling of recirculated control room air. The CB Chillers receive cooling water from either the Emergency Service Water (ESW) System (Emergency supply) or the Well Water System (Normal supply) and are supplied with both normal and emergency standby power. The CBC System is capable of removing sensible and latent heat loads from the control room, including consideration of equipment heat loads and personnel occupancy requirements. The design basis of the CBC System is to maintain the control room temperature for a 30 day continuous occupancy.

The CBC System is designed to provide a controlled environment under both normal and accident conditions. A single subsystem can provide the required temperature control to maintain a suitable control building environment. This system is designed to maintain the room air at 75°F dry bulb and not more than 50% relative humidity when the outdoor air is at either summer design conditions (90°F dry bulb and 76°F wet bulb), or winter design conditions, (minus 6°F). {Note: winter design conditions do not rely upon the CBC system, but the separate heating coils in the Control Building HVAC system.} The local outside ambient temperature is expected to exceed the summer values approximately 2.5% of the time.

#### UFSAR Evaluation (Chapter 9.4):

If abnormal outside ambient temperatures occur, equipment operation will not be impaired. For example, an outside ambient temperature of 105°F maintained for 24 hours would cause the control room temperature to increase to 95°F if only one cooling system were in operation. The calculated temperatures are based on only one of these units operating. This maximum room temperature is well below the maximum operating temperature (104°F) and will not make the rooms uninhabitable or effect equipment operability.

Fires in the control room, the control building HVAC equipment room, or CBC area in the reactor building are the only credible events which can result in a complete loss of control building air conditioning or ventilation. In the case of fire in the control room or control building HVAC equipment room, an alternative ventilation flow path is established through the Division II switchgear room, which will maintain the room temperature below the 104°F normal maximum operating temperature during plant

shutdown from outside the control room. Loss of CBC cooling would result in the loss of air conditioning capability; however, the ventilation system can still function, as it is independent of the Chillers themselves. If the temperature rises to the 104°F maximum, the alternative ventilation flow path would maintain temperature below 104°F.

Thus, even in the unlikely event of a failure of the remaining Operable CBC subsystem during the allowed 30 day Completion Time of one CBC subsystem inoperable, room temperatures can be maintained within acceptable limits, using the alternate cooling mode described above. Consequently, the requested change to allow plant startup with one CBC subsystem inoperable will not impact plant safety.

Probabilistic Risk Assessment (PRA) Success Criteria:

Realistic room heatup evaluations that are used as input to the PRA success criteria make use of alternate cooling mechanisms, such as heat transfer through the walls that are below ground and realistic equipment survivability limits (125°F). These realistic evaluations demonstrate that the CBC System is only needed about 10% of the time when ambient conditions are above 100°F (about 5 hours a year). Given the very small amount of time that the system is actually required, the probability of any event that would actually require the CBC System to mitigate is exceedingly low.

The risk importance measures of the overall Control Building HVAC System, of which the CBC System is a part, in the PRA is very low - Level 1 and Level 2 Fussel-Vessel Importance Ratios (FV) of 0 and a Risk Achievement Worth (RAW) of 1.0. This does not meet the criteria for a Risk Significant System with respect to the PRA.

The individual Chillers have a RAW value of 1.01 in both the Level 1 (Core Damage Frequency (CDF)) and Level 2 (Large Early Release Frequency (LERF)) PRAs. This means that if each is assumed to fail individually, CDF (or LERF) is increased by a factor of 1.01. This is a negligible increase in CDF or LERF.

Regulatory Guide 1.174 states that any change in CDF of 1E-6/yr or less is classified as a "small change" and would be considered as an acceptable change. The change in CDF (delta CDF) of having the "A" Chiller inoperable would be the CDF with the Chiller out of service minus the baseline CDF or:

$$\text{Delta CDF} = 1.19\text{E-}5/\text{yr} - 1.18\text{E-}5/\text{yr} = 1\text{E-}7/\text{yr}$$

This is well below the RG criteria (1E-6/yr) for a "small change in risk."

Regulatory Guide 1.174 also states that any change in LERF of 1E-7/yr or less is classified as a "small change" and would be considered an acceptable change. The change in LERF (delta LERF) of having the "A" Chiller inoperable would be the LERF with the Chiller out of service minus the baseline LERF or:

$$\text{Delta LERF} = 1.15\text{E-}6/\text{y} - 1.14\text{E-}6/\text{yr} = 1\text{E-}8/\text{yr}$$

This is well below the RG criteria ( $1\text{E-}7/\text{yr}$ ) for a small change.

The DAEC PRA has been found to be of sufficient quality for making such determinations of risk-significance of SSCs, both through peer assessment by the Boiling Water Reactor (BWR) Owners' Group, and by NRC inspection of our implementation of 10 CFR 50.65 (Maintenance Rule – IR 50-331/01-07, 10/23/01). In addition, the Staff evaluated the robustness of the DAEC PRA as part of its review of our Extended Power Uprate license amendment request (Amendment No. 243). And while this was not an in-depth review of the DAEC PRA, the Staff did not identify any significant weaknesses in the DAEC PRA model.

The DAEC PRA assessment of the importance of the CBC System is similar to that of other BWR PRAs. For example, the “generic” BWR PRA model used to support the Risk-Informed TS changes, as described in BWR Owners' Group report, GE-NE A13-00464-02, “Technical Justification to Support Risk-Informed Improvements to Technical Specification Mode Restraints for BWR Plants,” has a similar conclusion as the DAEC model. The cooling function is not critical as long as the ventilation function remains available. Again, given the DAEC design, these two functions are performed by separate pieces of equipment. Thus, based upon the generic assessment, the incremental risk associated with plant startup with one CBC subsystem inoperable is deemed to be low.

It should be noted that the NRC has recently approved a generic TS change which would modify LCO 3.0.4 to allow entering MOSCAs with low risk-significant SSCs inoperable, provided the risk is effectively managed, see TS Task Force (TSTF) change TSTF-359, Rev. 8, (Ref. Federal Register Notice, 68 FR 16579, April 4, 2003). In its technical evaluation of that change, the Staff did not identify Control Room HVAC as a “high risk significant” system that should be exempted from the relaxation to LCO 3.0.4. This conclusion is consistent with both the DAEC and the BWROG assessments.

Therefore, the DAEC PRA is judged to be of sufficient quality for use in identifying risk-significant SSCs and for assessing the incremental risk of operating with one CBC subsystem inoperable during power operation, which is bounding over the transition risk of startup from Mode 4 to Mode 1.

Maintenance Rule (10 CFR 50.65) Performance:

The CBC System is included within the scope of the Maintenance Rule, based upon its design basis requirements to perform a safety-related function.

The performance criteria for Maintenance Preventable Functional Failures (MPFFs) and unavailability are as follows:

Average of "A" and "B" Chiller Train Unavailability per year, 3 year average:  
 $\leq 6.0\%$ . ("A" hours unavailable plus "B" hours unavailable divided by 2 X total  
hours in period)

Total of Chiller train MPFF's per year, 3 year average:  $\leq 5$  ("A" train failures plus  
"B" train failures divided by total time)

The current performance for the CBC System is "Green" within the above Maintenance Rule criteria. The current unavailability data (thru January 2003) is 3.4% and the MPFF data (also through January 2003) is 0.67, both well within their Maintenance Rule limits of performance. Thus, the system has exhibited good reliability and performance within the last 3 years.

Consideration for "other specified conditions" within the LCO Applicability:

Per the existing Bases to LCO 3.0.4:

LCO 3.0.4 is only applicable when entering Mode 3 from Mode 4, Mode 2 from Mode 3 or 4, or Mode 1 from Mode 2. Furthermore, LCO 3.0.4 is applicable when entering any other specified condition in the Applicability only while operating in Mode 1, 2, or 3. The requirements of LCO 3.0.4 do not apply in Modes 4 and 5, or in other specified conditions of the Applicability (unless in Mode 1, 2, or 3) because the ACTIONS of individual specifications sufficiently define the remedial measures to be taken. {emphasis added}

In addition to the allowance to enter Modes 1, 2, or 3 from any lower Mode of operation, the proposed LCO 3.0.4 exclusion Note to Required Action A.1 will also allow the "other specified conditions" in the LCO Applicability to be entered with one CBC subsystem inoperable. Specifically, the entry into the conditions of "moving irradiated fuel assemblies within the secondary containment;" and, "Operations with the Potential for Draining the Reactor Vessel (OPDRVs)," while simultaneously operating in Modes 1, 2 or 3, will be permitted. The third other specified condition in the Applicability of LCO 3.7.5, "Core Alterations," is not physically possible in Modes 1, 2 or 3, and thus, is not of concern with respect to this TS change. The consequences of any event associated with the movement of irradiated fuel assemblies within the secondary containment (such as a Fuel Handling Accident) or an OPDRV are bounded by those of the design basis accident, such as the Loss-of-Coolant Accident (LOCA) postulated to occur during Modes 1, 2 or 3, with respect to the CBC System (Reference DAEC License Amendment Nos. 237 & 240, Adoption of the Alternative Source Term, 10 CFR 50.67.) Thus, the allowance to enter these "other specified conditions" is bounded by the justification to enter Modes 1, 2 or 3. Notwithstanding the above, NMC has committed to not utilizing this allowance to move irradiated fuel assemblies (or portions thereof) within the secondary containment for the duration of this temporary allowance.

The CBC System is within the scope of the DAEC Maintenance Rule program (10 CFR 50.65). Thus, any planned maintenance on the CBC System would be coordinated for overall plant risk with other equipment maintenance or testing activities, per §50.65(a)(4). In addition, if an emergent situation occurs where one CBC subsystem becomes inoperable unexpectedly, the plant risk is reassessed and managed, as described in the industry guidance document for (a)(4), NUMARC 93-01, "Assessment of Risk Resulting from Performance of Maintenance Activities," as endorsed by NRC Regulatory Guide (RG) 1.182.

On this basis, NMC concludes that the proposed changes provide an acceptable means of controlling risk while transitioning into the MOSCA for the CBC System, with one subsystem inoperable. Thus, the proposed change will not impact plant safety or involve a significant increase in overall plant risk.

Accordingly, NMC concludes, on the basis of 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 amendments will not be inimical to the common defense and security or to the health and safety of the public. Consequently, we find that the proposed changes are acceptable.

## ENVIRONMENTAL CONSIDERATION

10 CFR Section 51.22(c)(9) identifies certain licensing and regulatory actions which are eligible for categorical exclusion from the requirement to perform an environmental assessment. A proposed amendment to an operating license for a facility requires no environmental assessment if operation of the facility in accordance with the proposed amendment would not: (1) involve a significant hazards consideration; (2) result in a significant change in the types or significant increase in the amounts of any effluents that may be released offsite; and (3) result in a significant increase in individual or cumulative occupational radiation exposure. Nuclear Management Company, LLC has reviewed this request and determined that the proposed amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR Section 51.22(c)(9). Pursuant to 10 CFR Section 51.22(b), no environmental impact statement or environmental assessment needs to be prepared in connection with the issuance of the amendment. The basis for this determination follows:

### Basis

The change meets the eligibility criteria for categorical exclusion set forth in 10 CFR Section 51.22(c)(9) for the following reasons:

1. As demonstrated in Attachment 1 to this letter, the proposed amendment does not involve a significant hazards consideration.
2. The proposed change involves the temporary allowance to enter the Applicability of the Technical Specification Limiting Condition for Operation of the Control Building Chiller System with one subsystem inoperable. This is an exception to the requirements of LCO 3.0.4, which would otherwise prohibit entering the Applicability while relying upon the LCO Actions.

The proposed change does not involve modifications to the radioactive waste processing systems or to radioactive waste effluent monitors. Accordingly, the changes do not require the radioactive waste processing systems to perform any different function than they are designed to perform nor do they change the operation or testing of any such system.

Therefore, this change will not result in a significant change in the types or significant increase in the amounts of any effluents that may be released offsite.

3. The proposed change will not appreciably change the way the plant or its systems are operated. Maintenance on any inoperable Control Building Chiller will continue to be done in accordance with as low as reasonably achievable (ALARA) principles.

Therefore, this change will not result in a significant increase in individual or cumulative occupational radiation exposure.