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 MURLEY, T.E. Office of Nuclear Reactor Regulation, Director (Post 870411)

SUBJECT: Application for amend to License DPR-49, revising LCO & surveillance requirements for primary containment integrity, secondary containment integrity & other sys & equipment of TS Section 3.7, "Containment Sys."

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Iowa Electric Light and Power Company

March 27, 1992

NG-92-1238

Dr. Thomas E. Murley, Director
Office of Nuclear Reactor Regulation
U. S. Nuclear Regulatory Commission
Attn: Document Control Desk
Mail Station P1-137
Washington, DC 20555

Subject: Duane Arnold Energy Center
Docket No: 50-331
Op. License No: DPR-49
Request for Technical Specification
Change (RTS-246): Revision to TS
Section 3.7, "Containment Systems".
File: A-117, T-23a

Dear Dr. Murley:

In accordance with the Code of Federal Regulations, Title 10, Sections 50.59 and 50.90, Iowa Electric Light and Power Company hereby requests to revise the Technical Specifications (TS) for the Duane Arnold Energy Center (DAEC).

The proposed change will revise the limiting conditions for operation and surveillance requirements for primary containment integrity, secondary containment integrity and other systems and equipment of TS section 3.7, "Containment Systems" in order to improve their clarity and consistency with Standard Technical Specifications. We have also proposed the addition of limiting conditions for operation and surveillance requirements for drywell average air temperature and secondary containment automatic isolation dampers to the existing TS.

As described in Attachment 2, this change does not include a surveillance requirement to verify the isolation time of the secondary containment automatic isolation dampers. As our existing TS do not have this surveillance requirement, we do not currently verify the isolation time of these dampers and we are developing an acceptable method for performing this testing. We expect to submit a separate request for a Technical Specification change after an acceptable surveillance test has been developed. We have discussed this issue with your staff.

This application has been reviewed by the DAEC Operations Committee and the DAEC Safety Committee.

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Dr. Thomas E. Murley
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A copy of this submittal, which includes our analysis of significant hazards consideration, is being forwarded to our appointed state official pursuant to the requirements of 10 CFR 50.91.

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

IOWA ELECTRIC LIGHT AND POWER COMPANY

By John F. Franz, Jr.
John F. Franz, Jr.
Vice President, Nuclear

State of Iowa
(County) of Linn

Signed and sworn to before me on
this 27th day of March, 1992,
by John F. Franz, Jr.

Kathleen M. Sullivan
Notary Public in and for the State of Iowa
September 28, 1992
Commission Expires

JFF/PMB/pjv*

- Attachments: 1) Evaluation of Change with Respect to 10 CFR Part 50.92
2) Proposed Change RTS-246 to the Duane Arnold Energy Center Technical Specifications and List of Affected Pages
3) Environmental Consideration

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EVALUATION OF CHANGE WITH RESPECT TO 10 CFR 50.92

Background:

In 1991, an independent evaluation of the Technical Specifications (TS) for the Duane Arnold Energy Center (DAEC) was completed. This evaluation was performed as part of the DAEC TS Improvement Program and included comparisons of the DAEC TS with TS from peer plants, Standard Technical Specifications (STS), and the draft Improved Technical Specifications (NUREG-1433). The purpose of this proposed change is to resolve the issues applicable to TS Section 3.7, "Containment Systems", which were identified in the 1991 review. Specifically, the proposed changes will revise the limiting conditions for operation (LCO) and surveillance requirements for primary containment integrity, secondary containment integrity, and other systems and equipment included in section 3.7 of the TS. Additionally, LCOs and surveillance requirements will be added for drywell average air temperature and secondary containment automatic isolation dampers. Most of these revisions are consistent with STS. (Note: we utilized NUREG-1202, July 1986 as our reference for the STS vs. NUREG-0123.)

Minor editorial and administrative changes are also proposed.

Iowa Electric Light and Power Company, Docket No. 50-331

Duane Arnold Energy Center, Linn County, Iowa

Date of Amendment Request: March 27, 1992

Description of Amendment Request:

The proposed license amendment revises DAEC TS Sections 1.0, 3.2, 3.5 and 3.7 to improve the clarity and consistency of LCOs and surveillance requirements for containment systems. Most of these changes are consistent with STS for BWR/4 plants. The significant changes to the TS are described below. Other administrative and editorial changes are described in Attachment 2.

Definition 15, Primary Containment Integrity

This definition is being revised for improved clarity and consistency with STS definition 1.31, "Primary Containment Integrity". This change is administrative in nature and is meant to ensure that the definition of primary containment integrity is consistent with the specified actions of revised TS section 3.7.B, "Primary Containment Power Operated Isolation Valves."

Definition 16, Secondary Containment Integrity

This definition is being revised for improved clarity and consistency with STS definition 1.38, "Secondary Containment Integrity." This change is administrative in nature and is meant to better define the requirements for isolating a secondary containment penetration and ensure consistency with new TS section 3.7.K, "Secondary Containment Automatic Isolation Dampers."

TS Section 3/4.7.A, Primary Containment Integrity

A new TS section 3.7.A.2 has been added. It specifies that primary containment integrity must be restored within 1 hour when the requirements of primary containment integrity are not met. This requirement was not previously included in TS section 3.7. The shutdown requirements, previously located in TS section 3.7.A.8, have been revised from "be in a cold shutdown condition within 24 hours" to "be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours". This change is consistent with the Action of STS section 3.6.1.1.

TS Section 3/4.7.B, Primary Containment Power Operated Isolation Valves
(Presently TS section 3/4.7.D)

In TS section 3.7.B.2, the actions to be taken when a primary containment isolation valve is inoperable have been revised to be more consistent with the actions of STS section 3.6.3, "Primary Containment Isolation Valves."
Specifically:

- In TS section 3.7.B.2, the requirement to "maintain at least one isolation valve OPERABLE* or ISOLATED**" is redundant to action 2.b of this specification and has been changed to "maintain at least one isolation valve OPERABLE in each affected penetration that is open." The footnote (**) is no longer required and has been deleted. This change is consistent with action a. of STS section 3.6.3.
- In TS section 3.7.B.2.b, the requirement to have "at least one automatic valve locked or electrically deactivated" has been changed to "at least one deactivated automatic isolation valve." This change deletes the reference to electrical deactivation and is consistent with action a.2 of STS section 3.6.3. A discussion of appropriate means to deactivate containment isolation valves has been added to the Bases of TS section 3.7.B.
- In TS section 3.7.B.2.c, the requirement to isolate each affected penetration by use of "at least one manual valve locked in the isolated position" has been revised to isolate each affected penetration by use of "at least one closed manual valve". This change is in accordance with action a.3 of STS section 3.6.3.
- In TS section 3.7.B.3, the requirement to be in a cold shutdown condition in 24 hours has been revised to "be in at least HOT SHUTDOWN within 12 hours and COLD SHUTDOWN within the following 24 hours". This change is consistent with actions of STS section 3.6.3.

TS Section 3/4.7.C, Drywell Average Air Temperature

Limits, actions and surveillances for drywell average air temperature were not previously specified in the DAEC TS. New TS section 3/4.7.C, Drywell Average Air Temperature, is consistent with STS section 3.6.1.7, Drywell Average Air Temperature, except that the applicability is DAEC-specific. (The applicability is consistent with the applicability for Primary Containment Integrity, DAEC TS section 3.7.A.1.) The proposed limit of 135 F is consistent

with STS and with the value assumed in the DAEC Primary Containment Response Analysis for a Design Basis Accident as described in UFSAR section 6.2.1.3.3.1.

TS Section 3/4.7.D, Pressure Suppression Chamber-Reactor Building Vacuum Breakers (Presently section 3/4.7.A.3)

This section has been revised to improve its clarity and consistency with STS section 3.6.4.2, "Reactor Building-Suppression Chamber Vacuum Breakers." The significant changes are as follows:

- TS section 3.7.D.1 now specifically requires that both valves in the vacuum breaker assembly be operable. The previous specification was more general in that it only discussed the "vacuum breakers." This change is consistent with STS section 3.6.4.2. The specified applicability is the same as required in previous TS section 3.7.A.3.a.
- TS sections 3.7.D.2 and 3.7.D.3 will specify what actions are to be taken if one valve of the vacuum breaker assembly is either inoperable for opening (but known to be closed) or is open. Previously, TS actions were specified for a vacuum breaker found to be "inoperable for any reason." This change more clearly recognizes the dual functions (vacuum relief and containment isolation) of these valves and is consistent with actions a. and b. of STS section 3.6.4.2. The time allowed to repair the valves has been revised from 7 days to 72 hours to be consistent with actions a. and b. of STS section 3.6.4.2.
- TS section 3.7.D.4 contains operability requirements for the position indication of the vacuum breaker assembly valves. Operability of the position indicators was not specified previously in the TS but is necessary to accurately determine the position of the vacuum breakers and ensure compliance with proposed specification 3.7.D.1. This new specification is consistent with action c. of STS section 3.6.4.2.
- Shutdown requirements have been added to each of the action statements. These requirements are consistent with STS section 3.6.4.2 and require the plant to "be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours." The shutdown requirements were previously located in TS section 3.7.A.8 and required that the "reactor be in a cold shutdown condition in 24 hours".
- Surveillance Requirement 4.7.D.1 has been added requiring verification at least once per week that the vacuum breaker assembly valves are closed. This surveillance requirement is consistent with STS section 4.6.4.2.a.
- Surveillance requirement 4.7.D.2 has been revised for clarity and will require that the position indicator of each vacuum breaker assembly valve be verified as operable during the quarterly cycling test. This requirement was not explicit in previous TS section 4.7.A.3.a. Surveillance requirement 4.7.D.3 has been revised for clarity and now specifies that the opening setpoint of each breaker (less than or equal to 0.5 psid) must be verified each quarter. This setpoint was previously described in TS section 3.7.A.3.a. Both of these surveillance requirements were previously performed as part of TS section 4.7.A.3.a. The proposed frequency of these

surveillances is consistent with previous TS section 4.7.A.3.a. and in accordance with the recommendations of our Inservice Testing Program.

TS Section 3.7.E, Drywell-Pressure Suppression Chamber Vacuum Breakers
(Presently section 3/4.7.A.4)

This section has been revised to improve its clarity and consistency with STS section 3.6.4.1, "Suppression Chamber-Drywell Vacuum Breakers". The significant changes are as follows:

- TS section 3.7.E.1 has been revised to be consistent with STS section 3.6.4.1. The specified applicability is the same as required in previous TS section 3.7.A.4.a.
- TS sections 3.7.E.2 and 3.7.E.3 will specify what actions are to be taken if one vacuum breaker is either inoperable for opening (but is known to be closed) or is open. This change is consistent with actions a. and b. of STS section 3.6.4.1. These actions and specified time limits were not clearly delineated in previous TS section 3.7.A.4. Shutdown requirements consistent with STS section 3.6.4.1 have been added to each of these action statements. The shutdown requirements of previous TS section 3.7.A.4.d have been deleted.
- TS section 3.7.E.4 contains operability requirements for the position indication of the vacuum breakers. Position indicators were previously mentioned in TS section 3.7.A.4.b but there was no explicit requirement concerning operability. This new section is similar to action c. of STS section 3.6.4.1 except that the actions to be taken to verify that a vacuum breaker is closed are the same as required by previous TS section 3.7.A.4.b. These actions are acceptable in that, like the STS actions, they verify that a potential large bypass leakage path from the drywell to the pressure suppression chamber does not exist. Shutdown requirements consistent with STS section 3.6.4.1 have been added.
- Surveillance Requirement 4.7.E.1 has been added requiring verification at least once per week that the vacuum breakers are closed. This surveillance is consistent with STS section 4.6.4.1.a.
- Surveillance Requirement 4.7.E.2 has been revised for clarity and will require that the position indicator of each vacuum breaker is verified to be operable during the monthly cycling test. This requirement was not specified in previous TS section 4.7.A.4.a.
- In TS section 4.7.E.4, the details of the leak test of the drywell-suppression chamber structure have been deleted. These details are located in the surveillance test procedure and are not required to be in the TS.
- Previous TS section 4.7.A.4.b has been deleted. The requirement to verify that a large bypass leakage path from the drywell to the torus does not exist is already included in new TS section 3.7.E.4.b. The requirement to exercise the operable vacuum breakers (upon determination that a vacuum breaker is inoperable for opening) in previous TS section 4.7.A.4.c has also been deleted. Conditional testing of this type is unnecessary unless a common

mode failure is the suspected cause of failure. Previous surveillance testing of these components has shown a high degree of reliability and has not identified any common mode failures. Conditional testing of operable vacuum breakers is not required by STS section 4.6.4.1.

TS Section 3/4.7.F, Main Steam Isolation Valve Leakage Control System (MSIV-LCS)
(Presently section 3/4.7.E)

This section has been revised for clarity and to eliminate unnecessary conditional surveillance testing. The significant changes are as follows:

- In TS section 3.7.F.2, the statement "all active components of the other MSIV-LCS subsystems are OPERABLE" has been changed to "all active components of the other MSIV-LCS subsystems are verified to be OPERABLE". Currently, when it is determined that one MSIV-LCS subsystem or blower is inoperable, the other three MSIV-LCS subsystems and blowers must be demonstrated to be operable immediately and weekly thereafter. This testing of redundant components is judged to be non-conservative in that if the components fail while undergoing testing or as a result of the increased testing, the plant would be without the protection of that subsystem or component during the time permitted by TS. This revision proposes that the "alternate" systems be determined operable based on the DAEC Inservice Testing Program (IST) results and verification that the systems are in an operable status. Title 10 CFR, Part 50.55a, clearly indicates that "operational readiness of pumps and valves whose function is required for safety" is demonstrated by inservice examinations conducted in accordance with ASME Code, Section XI. The DAEC IST program, which is based on these generally recognized codes and standards, has been previously submitted to the NRC in response to NRC Generic Letter 89-04. This change is similar to those changes made in Amendment 174 to the DAEC TS and is consistent with the testing requirements contained in the STS. Accordingly, the surveillance requirement for testing of the redundant MSIV-LCS subsystem in previous TS section 4.7.E.2 has been deleted.
- In TS section 3.7.F.3, the requirement to be in "the COLD SHUTDOWN Condition within 24 hours" has been changed to "be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours". This change is consistent with the STS shutdown requirements and the other shutdown requirements of revised TS section 3.7.

TS Section 3/4.7.G, Suppression Pool Level and Temperature (Presently section 3/4.7.A.1)

The applicability of the LCOs for suppression pool level and temperature has been revised to delete reference to "work which has the potential to drain the vessel." Suppression pool level and temperature requirements are designed to ensure that the suppression pool has the capability of absorbing the energy associated with decay heat and sensible heat released during a reactor blowdown from a design basis accident, not to ensure that a source of water exists for the ECCS pumps. These suppression pool level and temperature limits are not applicable during refueling or when there is no potential for vessel blowdown.

Such requirements are found elsewhere in TS (e.g., section 3.5.G.) This change is consistent with STS.

TS section 3.7.G.1, "Suppression Pool Level," has been rewritten to be consistent with STS section 3.6.2.1.a.1. References to indicated suppression pool water level (in percent) have been added for consistency with installed instrumentation. An action statement has been added consistent with action a. of STS section 3.6.2.1 which requires that suppression pool water level be restored to within the limits within 1 hour (if out of specification) and adds specific shutdown requirements. The requirement to restore water level to within specifications within 1 hour was not previously included in the DAEC TS. The shutdown requirements were previously located in TS section 3.7.A.8.

TS section 3.7.G.2, "Suppression Pool Temperature", has been completely rewritten for consistency with STS section 3.6.2.1.a.2 and 3.6.2.1.a.3. The significant changes are as follows:

- TS section 3.7.G.2.a has been rewritten to specify that the average suppression pool temperature shall be less than or equal to 95°F during normal operation. This requirement is consistent with STS section 3.6.2.1.a.2. in that it specifies that the temperature limit is an average.
- TS section 3.7.G.2.b is a new requirement that specifies what actions are to be taken when average suppression pool water temperature is greater than 95°F (but less than 110°F) and not performing testing which adds heat to the suppression pool. The actions to restore water temperature to less than or equal to 95°F within 24 hours and the shutdown requirements are consistent with those actions specified in action b. of STS section 3.6.2.1. The requirement to verify that suppression pool average water temperature is less than 110°F once per hour is consistent with surveillance requirement b.2.(a) of STS section 4.6.2.1. These two requirements have been combined into TS section 3.7.G.2.b for clarity. Previous TS section 3.7.A.1 did not specify what actions are to be taken when suppression pool average water temperature exceeds 95°F during normal operation.

TS section 3.7.G.2.c states that the actions to be taken when suppression pool average water temperature exceeds 105°F during testing which adds heat to the pool. These actions (previously located in TS section 3.7.A.1.c.(2)) have been rewritten for clarity and to be consistent with action b.1 of STS section 3.6.2.1. The additional requirement to verify that suppression pool average water temperature is less than 110°F once per hour is consistent with revised TS section 3.7.G.2.b and surveillance requirement b.2.(a) of STS section 4.6.2.1.

- TS section 3.7.G.2.d states that the action to be taken when suppression pool average water temperature is greater than or equal to 110°F. The requirement to scram the plant is consistent with current TS section 3.7.A.1.c.(3) and action b.2 of STS section 3.6.2.1.
- TS section 3.7.G.2.e contains the actions to be taken when suppression pool average water temperature is greater than or equal to 120°F. The requirement to depressurize to less than 200 psig is consistent with previous TS section 3.7.A.1.C.(4) and action b.3 of STS section 3.6.2.1. This action will require that the reactor be less than 200 psig within 12 hours. This allowed

completion time is reasonable and is based on operating experience related to the amount of time required to reach 200 psig from full power in an orderly manner. Therefore, the reference to normal cooldown rates previously included in TS section 3.7.A.1.c.(4) has been deleted.

- TS section 4.7.G.1, "Suppression Pool Level," has been rewritten for clarity and consistency with STS section 4.6.2.1.a. This requirement was previously located in TS section 4.7.A.1.a.
- TS section 4.7.G.2, "Suppression Pool Temperature", has been rewritten for clarity and is consistent with STS sections 4.6.2.1.a and 4.6.2.1.b.1. The requirement to verify suppression pool average water temperature is within the limits once per day was previously part of TS section 4.7.A.1.a. The requirement to verify suppression pool average water temperature at least once every 5 minutes during testing which adds heat to the pool is consistent with previous TS section 4.7.A.1.b. The requirement, however, to monitor pool temperature every 5 minutes whenever there is indication of relief valve operation is not included in STS section 3/4.6.2.1 and has been deleted. This requirement has been deleted because our Emergency Operating Procedures (EOPs) already define what actions are to be taken in the event a relief valve inadvertently opens or sticks open. These actions include the use of all available means to close the valve, initiation of suppression pool cooling and initiation of a plant shutdown. Requiring the operators to monitor suppression pool temperature during these events is redundant to the those actions already specified in plant procedures and the EOPs. However, the requirement to monitor suppression pool temperature every 5 minutes during testing which adds heat to the suppression pool is appropriate. The 5 minute frequency during testing is justified by rates at which tests can heat up the suppression pool and has been shown to be acceptable through operating experience.

TS Section 3/4.7.H, Containment Atmosphere Dilution (Presently section 3/4.7.A.6)

The shutdown requirements of TS sections 3.7.H.1 and 3.7.H.2 have been changed from "the reactor must be taken out of power operation" to "be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours." This change ensures that these shutdown requirements are consistent with the other shutdown requirements of this chapter.

The TS has been revised to specify that this system is required to be operable when the reactor is in power operation and the primary containment is required to be inerted. As described in the bases to previous TS section 3.7.A.6, the CAD system is designed to ensure that the containment atmosphere remains inerted after a LOCA by having the capability to inject nitrogen into the containment. However, during plant startups and prior to normal plant shutdowns, access to the drywell is permitted for leak inspections and the containment is not required to be inerted during these periods as in revised TS section 3.7.I. Therefore, because the containment is not inerted during these periods, it is appropriate to only require the CAD system to be operable when the containment is required to be inerted.

TS Section 3/4.7.I, Oxygen Concentration (Presently section 3/4.7.A.5)

This section has been rewritten for clarity and consistency with STS section 3.6.6.2, "Drywell and Suppression Chamber Oxygen Concentration." The significant changes are as follows:

- TS section 3.7.I.1 has been added to specify that both the drywell and suppression chamber oxygen concentrations must be less than 4% during reactor power operation. This requirement is consistent with STS section 3.6.6.2. The applicability is consistent with previous TS section 3.7.A.5.A. Discussion of the startup test program in previous TS section 3.7.A.5.a is no longer applicable and has been deleted.
- TS sections 3.7.I.1.a and 3.7.I.1.b have been added and specify the operating conditions during which oxygen concentration must be less than 4%. These requirements (previously located in TS section 3.7.A.5.b) have been revised to be consistent with applicability a. and b. of STS section 3.6.6.2. The reference to 15% power in STS has been changed to "RUN" to be consistent with current TS requirements. Using the mode switch in "RUN" to determine applicability is more conservative than 15% power. (The reactor mode switch is placed in RUN at approximately 5-12% power.)
- TS section 3.7.I.2 has been added to specify actions to be taken when oxygen concentration is not within the specified limits. These actions are consistent with the actions of STS section 3.6.6.2. The reference to Startup in STS, however, is changed to STARTUP/HOT STANDBY to be consistent with DAEC terminology. The shutdown requirements were previously located in TS section 3.7.A.8.
- TS section 4.7.I.1 contains the oxygen surveillance requirements previously located in TS section 4.7.A.5. However, an additional requirement to verify oxygen concentration within 24 hours after entering the RUN mode has been added and the surveillance frequency has been changed from twice weekly to once every 7 days. These changes are consistent with STS section 4.6.6.2 except that the reference to 15% power is changed to RUN to be consistent with TS section 3.7.I.

TS Section 3/4.7.J, Secondary Containment (Presently section 3/4.7.C)

The shutdown requirement of previous TS section 3.7.C.2.c has been revised to be consistent with the shutdown requirements of the remainder of this chapter.

Previous TS sections 4.7.C.1.a and 4.7.C.1.b have been deleted. They described historical preoperational secondary containment tests and tests performed during the first operating cycle.

TS section 4.7.J.1.a has been revised to change the description of calm wind conditions from < 5 mph to < 15 mph. An engineering evaluation of the effects of wind speed and direction on the ability of the SGTS to maintain 1/4" vacuum in secondary containment has been performed. This evaluation is based on data collected from secondary containment/SGTS surveillance testing performed since November 1989, which represents a cross section of different wind speeds, wind directions, and the corresponding differential pressures. The instrumentation

used to record the secondary containment vacuum readings consists of 4 manometers installed on the 4 outside walls of the Reactor Building 5th floor. These manometer readings were averaged during the surveillance test to determine the ability of the SGTS to maintain the Reactor Building at 0.25" vacuum. Our evaluation of the effects of wind speed on surveillance test results indicates that, while wind effects can be seen on individual manometers, there is minimal effect on the average manometer readings with wind speeds up to 15 mph (the majority of the data points are grouped in the 5 to 15 mph range.) A discussion of these test results has been added to the Bases for TS section 3.7.J.

Previous TS section 4.7.C.1.d has been deleted. During reactor power and shutdown conditions, the reactor building (secondary containment) minimizes any ground level release of radioactive materials which might result from a serious accident. Currently, TS section 4.7.C.1.d requires that, after a secondary containment violation is identified, the SGTS must be operated immediately after the affected zones are isolated from the remainder of the secondary containment to confirm the system's ability to maintain the remainder of the secondary containment at .25" vacuum. The demonstration of secondary containment operability is unnecessary in every case of violation of secondary containment integrity since violations are usually minor in nature (open doors, penetrations, etc.) Secondary containment integrity is normally fully restored soon after the violation is identified and therefore, testing of the SGTS to verify secondary containment's "ability to maintain the remainder of the secondary containment" at .25" vacuum is not necessary. This testing requires insertion of a primary containment isolation system Group III isolation signal and operation of the Standby Gas Treatment System. However, if secondary containment integrity violations are identified in which secondary containment is not readily restored or which require modification or alteration of the normal secondary containment boundary, verification of secondary containment operability is appropriate but will normally be performed as a part of post-modification testing. Verification of secondary containment integrity after identification of a secondary containment violation is not required by STS section 3.6.5.1, "Secondary Containment Integrity."

TS Section 3/4.7.K, Secondary Containment Automatic Isolation Dampers

Operability and surveillance requirements for secondary containment automatic isolation dampers were not previously included in the DAEC TS. New TS sections 3.7.K.1 - 3.7.K.3 are consistent with STS section 3.6.5.2, "Secondary Containment Automatic Isolation Dampers," except that the applicability is DAEC-specific and the list of applicable valves/dampers is not contained within the TS but will be located in a DAEC Administrative Control Procedure. Incorporating the secondary containment isolation valve/damper list into a plant procedure rather than the TS meets the guidance of NRC Generic Letter 91-08, "Removal of Component Lists from Technical Specifications" in that the applicable plant procedures will be subject to the change control provisions for plant procedures in the Administrative Controls Section of the TS. The change control provision of the TS provide an adequate means to control changes to these component lists without including them in the TS.

A footnote "*" has been added to TS sections 3.7.K.2.b and 3.7.K.2.c. This note permits isolation valves/dampers which are closed to satisfy secondary

containment integrity requirements to be re-opened on an intermittent basis under administrative control. This note is identical to the note included with TS section 3.7.B, "Primary Containment Power Operated Isolation Valves." The discussion of acceptable administrative controls already included in the Bases for TS section 3/4.7.B is also applicable to these specifications.

TS section 4.7.K.1 contains the secondary containment automatic isolation valve/damper surveillance requirements. This requirement is similar to STS section 4.6.5.2.b. The requirement to cycle the valves/dampers after maintenance or repair (as required by STS section 4.6.5.2.a) has not been included. This type of post-maintenance testing is specified in plant procedures and need not be specified in the TS.

The surveillance requirement of STS section 4.6.5.2.c has also not been included. This surveillance specifies that the isolation time of secondary containment automatic isolation dampers must be verified at least once per 92 days. Secondary containment isolation dampers at the DAEC are not capable of individual remote manual operation and, as such, have not historically undergone individual stroke time testing. We are in the process of reviewing alternate means of performing this testing including the use of a computerized containment isolation monitoring system. Upon completion of this review, we will submit a proposed amendment to the Technical Specifications to add a surveillance requirement for timing operation of secondary containment automatic isolation dampers.

TS Section 3/4.7.L, Standby Gas Treatment System (Presently section 3/4.7.B)

The minimum capacity of the inlet heaters on each train of the SGTS in TS section 4.7.L.1.b has been revised from 11 kw to 22 kw. These electric heaters are provided to assure the SGTS inlet air humidity does not exceed 70% relative humidity. An analysis has been performed that demonstrates that with 4000 cfm of incoming air at its worst case conditions of 100% relative humidity and 150 F, a final temperature of 166 F at 70% relative humidity would correspond to a 22 kw electric heater. These initial conditions are specified in UFSAR section 6.5.3.3. The temperature rise across the heaters from this case is less than the 20 F maximum differential temperature specified in UFSAR section 6.5.3.3. No modifications have been made to the heaters themselves.

The surveillance frequency in TS section 4.7.L.1.c for demonstrating that air distribution is uniform across the HEPA filters has been changed from "annually" to "after each complete or partial replacement of the HEPA filter bank or after any structural maintenance of the filter system housing." Air flow distribution is a function of system geometry and blockage. Inspections for blockage are performed regularly as specified in TS section 4.7.L.1.g. Therefore, demonstrating uniform air distribution annually is not necessary to assure system operability unless system geometry has been changed. This testing philosophy is supported by ASME N510-1989, "Testing of Nuclear Air Treatment Systems", Table 1, "Tests and Inspections with Recommended Frequencies".

In TS section 3.7.L.3, the requirement to "suspend fuel handling" stated in previous TS section 3.7.B.3 has been revised to "suspend reactor building fuel

cask and irradiated fuel movement." This change ensures consistency with similar wording in TS sections 3.7.K.3 and 3.7.J.2.a.

Bases

The Bases for TS section 3/4.7 have been reorganized for clarity and consistency with revised TS section 3/4.7. Additional information has been added to better describe the bases for the limiting conditions for operation and surveillance requirements. All of these changes are consistent with the changes to the individual specifications described above.

Bases information has been added for new specifications "Drywell Average Air Temperature" and "Secondary Containment Automatic Isolation Dampers."

The descriptions of charcoal adsorber bypass leakage and radioactive methyl iodide removal efficiency in the Bases for sections 3.7.L and 4.7.L, "Standby Gas Treatment System" have been revised to be consistent with the limits of TS sections 3.7.L.2.a and 3.7.L.2.b respectively. These changes correct discrepancies identified in NRC Inspection Report 89-20.

Basis for Proposed no significant hazards consideration determination:

The Commission has provided standards (10 CFR 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; (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 the proposed request for Technical Specification change, we have concluded:

1) The proposed amendment will not involve a significant increase in the probability or consequences of an accident previously evaluated because the requested revisions do not affect the FSAR safety analyses involving these systems.

Definitions

The revisions to Definition 15, "Primary Containment Integrity" and Definition 16, "Secondary Containment Integrity" agree with the corresponding definitions of the STS. These changes are administrative in nature in that they only clarify the requirements for containment integrity and the appropriate means of isolating penetrations. These changes do not affect the operation or function of the containment isolation valves/dampers or the primary and secondary containment isolation systems and, therefore, do not result in a significant increase in the probability or consequences of an accident previously evaluated.

Primary Containment Integrity

The revision to TS section 3.7.A, "Primary Containment Integrity", only adds a specific requirement to restore primary containment integrity within 1 hour or commence a plant shutdown. These actions are consistent with the actions specified in STS for primary containment integrity. No changes to the primary containment boundary or the requirements for primary containment integrity have been proposed. Therefore, this change does not result in a significant increase in the probability or consequences of an accident previously evaluated.

Primary Containment Power Operated Isolation Valves

The revisions to TS section 3.7.B, "Primary Containment Power Operated Isolation Valves" are editorial in nature in that the wording has only been changed to be consistent with the STS requirements for primary containment isolation valves. These changes do not affect the function of the valves, the requirements to isolate a penetration with an inoperable containment isolation valve or the actual methods of isolation. Penetrations are still required to be isolated within 4 hours in a manner that cannot be adversely affected by a single active failure. Therefore, these changes do not result in a significant increase in the probability or consequences of an accident previously evaluated.

Drywell Average Air Temperature

The addition of limits, actions, and surveillance requirements for drywell average air temperature are intended to ensure that the initial assumptions in the DAEC Primary Containment Response Analysis to a DBA remain valid. The temperature limit (135 F) corresponds to the initial drywell average temperature assumed for this analysis in the UFSAR. The specified limits, actions and surveillance requirements are consistent with STS. The addition of this limit to the TS will not affect the actual operation or function of any equipment but will ensure that the containment analysis remains valid. Therefore, the addition of this limit will not result in a significant increase in the probability or consequences of an accident previously evaluated.

Pressure Suppression Chamber-Reactor Building Vacuum Breakers

The changes to TS section 3/4.7.D only provide additional detail and operability requirements for the pressure suppression chamber-reactor building vacuum breakers. These additional details are consistent with the requirements of STS. Specifying separate operability requirements for vacuum breakers inoperable for opening (but known to be closed) or open better reflects the dual functions of these valves (vacuum relief and containment isolation). The additional surveillance requirement will better ensure that the containment isolation function of these valves is maintained. The rewording of existing surveillances only clarifies current requirements. These changes do not affect the actual function, setpoints, or number of valves required to be operable and therefore do not result in a significant increase in the probability or consequences of an accident previously evaluated.

Drywell-Pressure Suppression Chamber Vacuum Breakers

The changes to TS section 3/4.7.E, only provide additional detail and operability requirements for the drywell-pressure suppression chamber vacuum breakers. These additional details are consistent with the requirements of STS. Specifying separate operability requirements for vacuum breakers inoperable for opening (but known to be closed) or open better reflects the dual functions of these valves. The additional requirement to verify that each vacuum breaker is closed at least once per week will better ensure that the isolation boundary between the drywell and torus is maintained. The elimination of the requirement to exercise all operable drywell-pressure suppression chamber vacuum breakers upon determination that a vacuum breaker is inoperable for opening will not affect the reliability of these vacuum breakers. The only valid reason to exercise the operable vacuum breakers is if a common mode failure is suspected. We have reviewed the maintenance history of these valves and have not identified any instances of common mode failures. Conditional testing of these vacuum breakers is not required by the STS. Therefore, these changes will not result in a significant increase in the probability or consequences of an accident previously evaluated.

Main Steam Isolation Valve Leakage Control System (MSIV-LCS)

The change to TS Section 3/4.7.F, "MSIV-LCS", deletes the unnecessary and potentially non-conservative conditional surveillance testing of the redundant MSIV-LCS subsystems. Although the proposed change will reduce the amount of testing of the MSIV-LCS, reliability of these systems would not be decreased and the necessary assurance that the alternate systems/subsystems/components will operate when needed is provided by the ASME Section XI IST Program.

The possibility of human error will decrease with reduced testing. Human error such as misalignment of valves after the system is returned to its normal configuration following testing and the misdirection of the operators attention from monitoring and directing plant operations is less likely to occur if this testing is eliminated. Additionally, reducing the scope and frequency of surveillance testing will decrease the probability of equipment failure (due to testing) which could require plant shutdown. Therefore, this change will not increase the probability of occurrence or consequences of an accident previously evaluated.

Suppression Pool Level and Temperature

The changes to TS section 3/4.7.F, "Suppression Pool Level and Temperature", are intended to clarify these requirements and make them more consistent with STS. The revision to the applicability statement which deletes the requirement for suppression pool level and temperature to be within the specified limits during work which has the potential to drain the vessel is in accordance with STS. Suppression pool level and temperature limits ensure that the suppression pool has the capability of acting as a heat sink for design basis events but are not appropriate or applicable during the refueling or cold shutdown conditions. No changes have been made to the actual suppression pool temperature or level limits and therefore, the assumptions made in the accident

and transient analyses remain valid. These limits are consistent with STS. The revisions to the surveillance requirements are also intended to improve clarity and consistency with STS. The deletion of the requirement to monitor suppression pool water temperature every 5 minutes during relief valve operation is appropriate in that plant operating and emergency operating procedures already specify what actions are to be taken when suppression pool average water temperature increases above 95°F including initiation of suppression pool cooling. Monitoring pool temperature every 5 minutes during these events is not necessary and is redundant to other actions. Therefore, these changes will not significantly increase the probability of occurrence of the consequences of an accident previously evaluated.

Containment Atmosphere Dilution

The revisions to the applicability of TS section 3.7.H, "Containment Atmosphere Dilution", requiring the containment atmosphere dilution system to be operable only when the reactor is in power operation and the primary containment is required to be inerted will not significantly increase the probability or consequences of an accident previously evaluated because the CAD system can only function when the containment is inerted. The function of the CAD system is to inject nitrogen into the containment after a LOCA and ensure the containment remains inerted. Drywell inspections performed after plant startup and prior to plant shutdown require that the primary containment be de-inerted for personnel access. Therefore, CAD system operability is not required during these inspections. No changes to the actual function or purpose of the CAD system are proposed.

Oxygen Concentration

The changes to TS section 3/4.7.I, "Oxygen Concentration" are administrative in that they only clarify the requirement that both the suppression chamber and the drywell must have oxygen concentrations of less than 4% by volume. The revisions to the surveillance requirements are consistent with STS. Decreasing the frequency of verification of oxygen concentration from twice per week to once per week is in accordance with STS and reflects the fact that during power operation, the containment is inerted and slightly pressurized such that air (oxygen) cannot leak into the containment. Therefore, these changes will not significantly increase the probability or consequences of an accident previously evaluated.

Secondary Containment

The deletion of the requirement to operate the SGTS immediately after a secondary containment violation is identified will not affect the reliability of the secondary containment in that containment integrity is normally fully restored immediately after a violation is identified. The testing of the SGTS involves insertion of a Group III containment isolation signal and is only appropriate if the restoration of secondary containment involves a temporary or new secondary containment boundary. These modifications to a secondary containment boundary, however, would require that the SGTS be operated as part

of post modification testing. Deleting the requirement for the SGTS to be operated after minor secondary containment violations will reduce the possibility of human error (such as misalignment of valves after the system is returned to its normal configuration) due to reduced testing. Operation of the SGTS after a secondary containment violation is not required by STS.

Revision of the definition of calm wind conditions will not affect the reliability or availability of the secondary containment or SGTS. An engineering evaluation on the effects of wind speed and direction on the ability of the SGTS to maintain 1/4" vacuum in secondary containment has been performed. The results indicate that while wind effects can be seen on individual instruments, there is minimal effect on the average instrument readings with wind speeds up to 15 mph. A discussion of this evaluation has been added to the Bases of TS section 3.7. Therefore, these changes will not significantly increase the probability or the consequences of an accident previously evaluated.

Secondary Containment Automatic Isolation Dampers

The addition of operability requirements, actions and surveillance requirements for secondary containment isolation dampers better ensures the integrity and isolation capability of the secondary containment. The new specifications are consistent with the requirements of the STS. The actual function or operation of the secondary containment isolation valves/dampers will not be affected. The appropriate valves/dampers will be incorporated in plant procedures that are subject to the change control provisions of TS. Therefore, these changes will not increase the probability of occurrence or consequences of an accident previously evaluated in the TS.

Standby Gas Treatment System

The change to the output requirements of the inlet heaters for each train of the SGTS from 11 kw to 22 kw better ensures that these heaters (and the SGTS) can perform their design function. The 22 kw output requirement ensures that the inlet air humidity does not exceed the 70% humidity specified in the UFSAR. This change does not affect the actual operation of the heaters or the SGTS.

The requirement to demonstrate the HEPA filter uniform air distribution after HEPA filter replacement or after structural maintenance on the filter system housing (rather than annually) will not decrease the reliability of the SGTS. The air flow test will be performed after work or modifications which have the ability to disrupt the system geometry or result in potential flow blockage.

Revising the shutdown LCO requirement in the various specifications from requiring the plant to be in Cold Shutdown in 24 hours to requiring Hot Shutdown in 12 hours and Cold Shutdown (or other condition not requiring equipment operability) in the following 24 hours is consistent with STS and the shutdown requirements in TS section 3.5. This new requirement will allow the reactor to be shutdown in a more controlled manner and will not result in a significant increase in the probability or consequences of an accident previously evaluated.

The revisions to the Bases are administrative in that they only reflect the changes to the individual specifications described previously in this section or correct minor discrepancies. All changes are consistent with the applicable specifications.

(2) The proposed amendment will not increase the possibility of a new or different kind of accident from any accident previously evaluated for the following reasons.

As described in the above response to question #1, none of the proposed changes alters the design of the plant or equipment or the plant's transient response. The changes to the definitions and limiting conditions for operation applicable to TS section 3.7 are consistent with STS and better ensure that equipment assumed to be operable in our accident analysis will be operable upon demand. The addition of limiting conditions for operation for drywell average temperature and secondary containment isolation valves will better ensure that the assumptions in our accident analysis remain valid.

The changes to the surveillance requirements are consistent with the STS. Those systems required to mitigate accidents evaluated in the UFSAR will still be operable and available.

The reduction in conditional surveillance testing of certain systems and equipment will reduce the probability of equipment failure as a result of excessive testing or due to human error.

(3) The proposed amendment will not involve a significant reduction in a margin of safety for the following reasons.

The revisions to the limiting conditions for operation in Chapter 3.7 of the TS will not invalidate the original licensing basis assumptions and will not invalidate any assumptions or input parameters for any DAEC event analysis. These changes provide more specific guidance only and are in accordance with the STS.

Extending the time period within which the DAEC must achieve Cold Shutdown conditions will permit increased operator attention and minimal distractions for operators during shutdown, thus minimizing the risks of unexpected operational transients.

Additional surveillance testing for certain instrumentation and systems will provide additional assurance that these systems will be available when needed.

Elimination of unnecessary or conditional surveillance testing will not reduce the minimum necessary equipment operability requirements or equipment reliability. Elimination of the redundant testing will reduce equipment failure due to excessive testing or human error.

In summary, the proposed administrative changes do not change the probability or consequences of an accident previously evaluated, do not create the possibility of a new or different kind of accident and do not involve a reduction in the margin of safety.

Therefore, the proposed license amendment is judged to involve no significant hazards consideration.

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PROPOSED CHANGE RTS-246 TO THE DUANE ARNOLD ENERGY CENTER
TECHNICAL SPECIFICATIONS

The holders of license DPR-49 for the Duane Arnold Energy Center propose to amend Appendix A (Technical Specifications) to said license by deleting certain current pages and replacing them with the attached, new pages. The List of Affected Pages is given below.

List of Affected Pages

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Summary of Changes:

The following list of proposed changes is in the order that the changes appear in the Technical Specifications.

PageDescription of Changes

iii	The Table of Contents has been revised to reflect that Section 3.7, "Containment Systems," has been renamed "Plant Containment Systems." Subsections A-D have been deleted and replaced with subsections A-M which correspond to the revision to TS section 3.7. The Surveillance Requirements and page numbers have also been revised accordingly.
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- vi In the List of Tables, the page at which Table 4.7-1 appears has been revised to correspond to the pagination of TS section 3.7.
- 1.0-4 Definition 15, "Primary Containment Integrity", has been revised to be more consistent with STS definition 1.31, "Primary Containment Integrity." Subsections a. and c. of previous TS definition 15 have been replaced with new subsection a. which is identical to subsection a. of STS definition 1.31 except for specific discussions of the PCIIV Table (which have been relocated to an Administrative Procedure) and incorporation of a statement allowing the valves to be opened to perform necessary operational activities. Subsection d. of previous TS definition 15 has been re-designated as subsection c.
- Definition 16, "Secondary Containment Integrity", has been revised for clarity and to be more consistent with STS definition 1.38, "Secondary Containment Integrity". Subsection c. of previous TS definition 16 has been replaced with subsection a. of STS definition 1.38 except for the discussions of a secondary containment isolation valve/damper table. The list of applicable valves/dampers will be located in an Administrative Procedure. Additionally, a note allowing the valves/dampers to be opened to perform operational activities has been added. The term "OPERABLE" has been capitalized in subsections b. and c. to denote that it is a term defined in TS section 1.0.
- 3.2-3 The reference to specification 3.7.B in TS section 3.2.D.2, "Reactor Building Isolation and Standby Gas Treatment System," has been changed to section 3.7. This more general reference reflects the re-organization of TS section 3.7.
- 3.5-10a The reference to specification 3.7.A.1 in TS section 3.5.G.4 has been changed to section 3.7. This more general reference reflects the re-organization of TS section 3.7.
- 3.5-16 The reference to section 3.7.A.1 in the Bases to TS sections 3.5.B and 3.5.C has been changed to section 3.7. This more general reference reflects the re-organization of TS section 3.7.
- 3.7-1 The title of TS section 3.7.A has been changed from "Primary Containment" to "Primary Containment Integrity."
- Revised TS section 3.7.A.1 contains the Primary Containment LCO previously located in TS section 3.7.A.2. The reference to section 3.7.D.2 has been revised to 3.7.B.2. The term, "Primary Containment Integrity" has been capitalized to denote that it is a term defined in TS section 1.0.

The specifications in previous TS section 3.7.A.1 are now located in TS section 3.7.G.

New TS section 3.7.A.2 specifies what actions are to be taken when the requirements of Primary Containment Integrity are not met. The actions (previously located in TS section 3.7.A.8) have been revised and are now consistent with the actions of STS section 3.6.1.1.

The title of TS section 4.7.A has been changed from "Primary Containment" to "Primary Containment Integrity."

Revised TS section 4.7.A.1 contains the Primary Containment Integrity surveillance requirements previously located in TS section 4.7.A.2. The term, "Primary Containment Integrity" has been capitalized to denote that it is a term defined in TS section 1.0.

The subtitle of TS section 4.7.A.1.a, "Type A Test" is no longer underlined.

In TS section 4.7.A.1.a.(1), the reference to TS section 4.7.A.2.a.(9) has been revised to 4.7.A.1.a.(8).

3.7-2 The underlining of subtitles of TS sections 4.7.A.1.a.(7) - 4.7.A.1.a.(9) and 4.7.A.1.b has been deleted.

In TS section 4.7.A.1.a.(9), the reference to TS section 4.7.A.2.(a)(8) has been revised to 4.7.A.1.a.(8). The reference to TS section 4.7.A.2.(d) has been revised to 4.7.A.1.d.

3.7-3 The underlining of subtitles of TS sections 4.7.A.1.b.(1), 4.7.A.1.b.(2), 4.7.A.1.c, 4.7.A.1.d, and 4.7.A.1.d.(1) has been deleted.

3.7-4 The underlining of subtitles of TS sections 4.7.A.1.d.(2) - 4.7.A.1.d.(4) has been deleted.

In TS section 4.7.A.1.d.(2)(a), the term "fueling" has been changed to "refueling".

3.7-5 The underlining of TS sections 4.7.A.1.e - 4.7.A.1.g has been deleted.

In TS section 4.7.A.1.g, the reference to TS section 4.7.A.2.d.4 has been revised to 4.7.A.1.d.(4) and the reference to TS section 4.7.A.2.d.3 has been revised to 4.7.A.1.d.(3).

3.7-7 TS section 3.7.B has been changed from "Standby Gas Treatment System" to "Primary Containment Power Operated Isolation Valves".

New TS section 3.7.B.1 contains the Primary Containment Power Operated Isolation Valve LCO previously located in TS section 3.7.D.1. The reference to TS section 3.7.D.2 has been revised to 3.7.B.2.

In TS section 3.7.B.2, (formerly section 3.7.D.2) the requirement to "maintain at least one isolation valve OPERABLE* or ISOLATED**" has been changed to "Maintain at least one isolation valve OPERABLE in each affected penetration that is open". The revised wording is consistent with action a. of STS section 3.6.3.

TS section 3.7.B.2.b has been revised to be consistent with action a.2 of STS section 3.6.3.

The note denoted by "*" has been deleted due to the changes to TS section 3.7.B.2. The note denoted by "**" has been changed to "*."

TS section 4.7.B has been changed from "Standby Gas Treatment System" to "Primary Containment Power Operated Isolation Valves."

TS section 4.7.B.1 contains the Primary Containment Power Operated Isolation Valve surveillance requirements previously located in TS section 4.7.D.1. The note previously denoted by "*" has been changed to "#." The note previously denoted by "**" has been changed to "##."

In the note denoted by "#", the reference to TS section 4.7.D.1.a has been revised to 4.7.B.1.a.

In the note denoted by "##", the reference to TS section 4.7.D.1.b has been revised to 4.7.B.1.b. The word "suction" has been capitalized.

3.7-8

TS section 3.7.B.2.c (formerly section 3.7.D.2.c) has been revised to be consistent with action a.3 of STS section 3.6.3. The footnote "**" has been changed to "*."

In TS section 3.7.B.3 (formerly 3.7.D.3), the references to TS sections 3.7.D.1 and 3.7.D.2 have been revised to 3.7.B.1 and 3.7.B.2 respectively. The requirement to "be in the Cold Shutdown condition within 24 hours" has been changed to "be in at least HOT SHUTDOWN within 12 hours and COLD SHUTDOWN in the following 24 hours." These shutdown requirements are consistent with the other shutdown requirements of this chapter.

The note denoted by "*" has been added and is identical to the note on TS page 3.7-7.

TS sections 3.7.B.4, "Purging," and TS section 3.7.B.4.a contain the requirements previously located in TS section 3.7.A.9. The underlining of the subtitle of TS section 3.7.A.9 has been deleted.

3.7-9

The title of TS section 3.7.C has been changed from "Secondary Containment" to "Drywell Average Air Temperature."

TS section 3.7.C.1 is a new specification for drywell average air temperature that is consistent with the drywell average air temperature LCO contained in STS 3.6.1.7. The specified applicability, however, is the same as specified in TS section 3.7.A.1, "Primary Containment Integrity" (without the exception for low power physics testing).

TS section 3.7.C.2 contains the action statement for Specification 3.7.C.1. These actions are identical to the actions required by STS section 3.6.1.7.

The title of TS section 4.7.C has been changed from "Secondary Containment" to "Drywell Average Air Temperature."

TS section 4.7.C.1 contains drywell average air temperature surveillance requirements similar to the surveillance requirements of STS section 4.6.1.7. The reference to volumetric average contained in the STS surveillance requirement is located in the Bases to DAEC TS section 3.7.C.

3.7-10

The title of TS section 3.7.D has been changed from "Primary Containment Power Operated Isolation Valves" to "Pressure Suppression Chamber - Reactor Building Vacuum Breakers".

TS section 3.7.D.1 contains the LCO for the Pressure Suppression Chamber - Reactor Building Vacuum Breakers previously located in TS section 3.7.A.3.a. This section has been revised to be consistent with STS section 3.6.4.2 "Reactor Building - Suppression Chamber Vacuum Breakers". The specified applicability is the same as required in current TS section 3.7.A.3.a. The setpoint specified in present TS section 3.7.A.3.a has been relocated to surveillance requirement 4.7.D.3. The term, Primary Containment Integrity, has been capitalized.

TS sections 3.7.D.2 - 3.7.D.4 contain the Action Statements for Specification 3.7.D.1. These actions, previously located in TS section 3.7.A.3.b. have been revised to be consistent with the actions of STS section 3.6.4.2. Specifically:

- The actions of TS section 3.7.D.2 are identical to action a. of STS section 3.6.4.2.
- The actions of TS section 3.7.D.3 are identical to action b. of STS section 3.6.4.2.
- The actions of TS section 3.7.D.4 are identical to action c. of STS section 3.6.4.2.

The title of TS section 4.7.D has been changed from "Primary Containment Power Operated Isolation Valves" to "Pressure Suppression Chamber - Reactor Building Vacuum Breakers."

TS section 4.7.D.1 is a new surveillance requirement and is consistent with STS section 4.6.4.2.a.

TS sections 4.7.D.2 and 4.7.D.3 contain the Pressure Suppression Chamber Reactor Building Vacuum Breakers surveillance requirements previously located in TS section 4.7.A.3.a. These surveillance requirements have been revised as follows:

- TS section 4.7.D.2 now specifies that the position indication shall be verified as part of the quarterly cycling test.
- TS section 4.7.D.3 now specifies that the opening setpoint of ≤ 0.5 psid shall be demonstrated. This setpoint was previously located in TS section 3.7.A.3.a.

3.7-11 The title of TS section 3.7-E has been changed from "Main Steam Isolation Valve Leakage Control System (MSIV-LCS)" to "Drywell-Pressure Suppression Chamber Vacuum Breakers".

TS section 3.7.E.1 contains the LCO for the Drywell-Pressure Suppression Chamber Vacuum Breakers previously located in TS section 3.7.A.4.a. This section has been revised to be consistent with the Suppression Chamber - Drywell Vacuum Breaker LCO contained in STS 3.6.4.1. The specified applicability, however, is the same as required in current TS section 3.7.A.4.a except that the reference to "except during testing" has been deleted. "Primary Containment Integrity" has been capitalized.

TS sections 3.7.E.2 - 3.7.E.4 contain the action statements for specification 3.7.E.1. These actions, previously located in TS sections 3.7.A.4.b - 3.7.A.4.d, have been revised to be consistent with the actions of STS section 3.6.4.1. Specifically:

- The actions of TS section 3.7.E.2 are identical to action a. of STS section 3.6.4.1.

- The actions of TS section 3.7.E.3 are identical to action b. of STS section 3.6.4.1.
- The actions of TS section 3.7.E.4 are identical to action c. of STS section 3.6.4.1 with the following exception. The actions of TS section 3.7.E.4.b are DAEC-specific and were previously located in TS section 3.7.A.4.b. The specified time limits, however, are in accordance with the time limits of action C.2 of STS section 3.6.4.1.

The title of TS section 4.7.E has been changed from "Main Steam Isolation Valve Leakage Control System" to "Drywell - Pressure Suppression Chamber Vacuum Breakers".

TS section 4.7.E.1 is a new surveillance requirement and is consistent with STS section 4.6.4.1.a.

TS sections 4.7.E.2 - 4.7.E.4 contain the Drywell - Pressure Suppression Chamber Vacuum Breaker surveillance requirements previously located in TS sections 4.7.A.4.a - 4.7.A.4.d. These surveillance requirements have been revised as follows:

- TS section 4.7.E.2 has been reworded for clarity and now specifies that the position indication shall be verified as part of the cycling test. This surveillance requirement was previously located in TS section 4.7.A.4.a.
- TS section 4.7.E.3 contains the inspection requirement previously located in TS section 4.7.A.4.c. The requirement to exercise all OPERABLE vacuum breakers upon identification of a vacuum breaker which is inoperable for opening (also located in previous TS section 4.7.A.4.c) has been deleted. The asterisk "*" has also been deleted.
- The surveillance requirement for determining Drywell - Pressure Suppression Chamber bypass leakage previously located in TS section 4.7.A.4.b has been deleted. This surveillance requirement is already part of the actions specified in TS section 3.7.E.4.b.
- TS section 4.7.E.4 contains the test requirement previously located in TS section 4.7.A.4.d. The details of this test have been deleted.
- The note "*" at the bottom of the page has been deleted.

3.7-12

The title of TS section 3.7.F has been changed from "Mechanical Vacuum Pump" to "Main Steam Isolation Valve Leakage Control System (MSIV-LCS)".

TS section 3.7.F.1 contains the LCO for the MSIV-LCS previously located in TS section 3.7.E.1. The reference to TS section 3.7.E.2 has been revised to 3.7.F.2.

TS section 3.7.F.2 contains the actions previously located in TS section 3.7.E.2. The statement allowing operation for 30 days after one MSIV-LCS is inoperable "provided all active components of the other MSIV-LCS subsystems are OPERABLE" has been changed to "verified to be OPERABLE".

TS section 3.7.F.3 contains the actions previously located in TS section 3.7.E.3. The reference to TS section 3.7.E has been revised to 3.7.F. The requirement to be in COLD SHUTDOWN in 24 hours has been changed to be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN in the following 24 hours.

The title of TS sections 4.7.F has been changed from "Mechanical Vacuum Pump" to "Main Steam Isolation Valve Leakage Control System".

TS section 4.7.F. contains the testing requirements previously stated in section 4.7.E.1. The footnote in TS sections 4.7.F.1.a and 4.7.F.1.e has been deleted.

TS section 4.7.E.2 has been deleted. The operable MSIV-LCS subsystems are now only required to be "verified to be OPERABLE" per TS section 3.7.F.2.

The note "*" at the bottom of the page has been deleted.

3.7-13

TS section 3.7.G, "Suppression Pool Level and Temperature" has been added. This new TS section contains the suppression pool level and temperature requirements previously located in TS section 3.7.A.1. The LCO now specifies that the suppression pool shall be OPERABLE. The applicability of the suppression pool level and temperature limits has been revised to delete references to "work is being done which has the potential to drain the vessel".

TS section 3.7.G.1, "Suppression Pool Level", contains the LCO for Suppression Pool Level previously located in TS sections 3.7.A.1.a and 3.7.A.1.b. This section has been revised for clarity and to be consistent with STS section 3.6.2.1. Specifically:

- TS section 3.7.G.1.a is consistent with STS section 3.6.2.1.a.1. A reference to indicated suppression pool water level (in percent) has been added.

- TS section 3.7.G.1.b is consistent with action a. of STS section 3.6.2.1. A reference to indicated suppression pool water level has been added.

TS section 3.7.G.2, "Suppression Pool Temperature", contains the LCOs for suppression pool temperatures previously located in TS section 3.7.A.1.c. This section has been revised for clarity. The specified limits and actions are consistent with STS section 3.6.2.1. Specifically:

- TS section 3.7.G.2.a specifies the normal suppression pool temperature limit previously located in TS section 3.7.A.1.c.(1). This temperature limit is consistent with the normal temperature limit specified in STS section 3.6.2.1.a.2.
- TS section 3.7.G.2.b is a new LCO which specifies what actions are to be taken when average suppression pool water temperature is $> 95^{\circ}\text{F}$ but $< 110^{\circ}\text{F}$ during operation and not performing testing which adds heat to the pool. These actions are consistent with action b. of STS section 3.6.2.1 and STS section 4.6.2.1.b.2.a.
- TS section 3.7.G.2.c contains the suppression pool water temperature limits during the performance of testing which adds heat to the suppression pool previously located in TS section 3.7.A.1.c.(2). This limit and the specified actions are consistent with STS section 3.6.2.1.a.2.(a) and action b.1. of STS section 3.6.2.1. The requirement to verify temperature is $< 110^{\circ}\text{F}$ once/hr has been added as an additional conservatism and is consistent with STS section 4.6.2.1.b.2.a.

TS section 4.7.G, "Suppression Pool Level and Temperature", has been added. This new TS section contains the suppression pool surveillance requirements previously located in TS section 4.7.A.1.

TS sections 4.7.G.1, "Suppression Pool Level", and 4.7.G.1.a contain the suppression pool level surveillance requirements previously located in TS section 4.7.A.1.a. This surveillance is consistent with STS section 4.6.2.1.a.

TS sections 4.7.G.2, "Suppression Pool Temperature" and 4.7.G.2.a contain the suppression pool temperature surveillance requirements previously located in TS section 4.7.A.1.a. This surveillance is consistent with STS section 4.6.2.1.b.

TS section 4.7.G.2.b contains the suppression pool temperature surveillance requirement previously located in TS section 4.7.A.1.b. The requirement to verify suppression pool water temperature every 5 minutes when there is indication of relief valve operation has been deleted. This surveillance is consistent with STS section 4.6.2.1.b.1. The details of this verification (monitoring) have been deleted.

3.7-14 TS section 3.7.G.2.d contains the suppression pool water temperature limits and actions previously located in TS section 3.7.A.1.c.(3). These limits and actions are consistent with action b.2 of STS section 3.6.2.1. The requirement for resuming power operation previously included in TS section 3.7.A.1.c.(3) is adequately covered by revised TS section 3.7.G.2.a and has been deleted.

TS section 3.7.G.2.e contains the suppression pool water temperature limit and actions previously located in TS section 3.7.A.1.c.(4). This limit and specified action have been reworded to be consistent with action b.3 of STS section 3.6.2.1.

3.7-15 TS section 3.7.H, "Containment Atmosphere Dilution," has been added. This new TS section contains the containment atmosphere dilution requirements previously located in TS section 3.7.A.6.

TS section 3.7.H.1 contains the requirements previously located in TS section 3.7.A.6.a. The applicability has been revised to specify that the containment atmosphere dilution system is only required to be operable when the primary containment is required to be inerted. The term "operable" has been capitalized. Additionally, the requirement to take the reactor "out of power operation" has been revised to "be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN in the following 24 hours" to be consistent with the other shutdown requirements of this chapter.

TS section 3.7.H.2 contains the requirements previously located in TS section 3.7.A.6.b. The requirement to take the reactor "out of power operation" has been revised to "be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN in the following 24 hours" to be consistent with the other shutdown requirements of this chapter.

TS section 3.7.H.3 contains the requirements previously located in TS section 3.7.A.6.c.

TS section 4.7.H., "Containment Atmosphere Dilution", has been added. This new TS section contains the containment atmosphere dilution surveillance requirements previously located in TS section 4.7.A.6.

TS section 4.7.H.1 contains the surveillance requirements previously located in TS section 4.7.A.6.a.

TS section 4.7.H.2 contains the surveillance requirements previously located in TS section 4.7.A.6.b.

TS section 4.7.H.3 contains the surveillance requirements previously located in TS section 4.7.A.6.c. The reference to TS section 4.7.A.6.A has been revised to 4.7.H.1.

3.7-16 TS section 3.7.I, "Oxygen Concentration," has been added. This new TS section contains the oxygen concentration requirement previously located in TS section 3.7.A.5. These requirements have been revised for clarity and to be consistent with STS Section 3.6.6.2. Specifically:

- TS section 3.7.I.1 is consistent with STS section 3.6.6.2. This section now specifies that both the drywell and suppression chamber oxygen concentration shall be less than 4%. The term "reactor power operation" has been capitalized.
- TS sections 3.7.I.1.a and 3.7.I.1.b contain the applicability requirements previously located in TS section 3.7.A.5.b. These requirements are consistent with STS sections 3.6.6.2.a and 3.6.6.2.b. The reference to 15% power contained in the STS, however, is changed to "RUN" as per current TS section 3.7.A.5.b.
- References to the startup test program previously located in TS section 3.7.A.5.a have been deleted.
- TS section 3.7.I.2 has been added and is consistent with the action of STS section 3.6.6.2.

TS section 4.7.I, "Oxygen Concentration," has been added. This new TS section contains the oxygen concentration surveillance requirements previously located in TS section 4.7.A.5. The frequency of the surveillance however, has been revised to be consistent with STS section 4.6.6.2.

3.7-17 TS section 3.7.J, "Secondary Containment" has been added. This new TS section contains requirements previously located in TS section 3.7.C.

TS section 3.7.J.2 contains the requirements previously located in TS section 3.7.C.2. The reference to TS section 3.7.C.1 has been revised to 3.7.J.1.

TS section 3.7.J.2.c has been revised to be consistent with the other shutdown requirements of this chapter.

TS section 4.7.J, "Secondary Containment" has been added. This new TS section contains surveillance requirements previously located in TS section 4.7.C.

TS section 4.7.J.1 has been revised to delete all mention of historical testing previously described in TS sections 4.7.C.1.a and 4.7.C.1.b.

TS section 4.7.J.1.a contains the surveillance requirements previously located in TS section 4.7.C.1.c. The reference to calm wind conditions as < 5 mph has been revised to < 15 mph. A new discussion of what constitutes calm wind conditions has been added to the Bases to TS section 3.7.L.

Previous TS section 4.7.C.1.d has been deleted. This type of verification testing is not required by STS.

3.7-18

TS section 3.7.K, "Secondary Containment Automatic Isolation Dampers", has been added. These requirements were not previously included in the DAEC TS. The requirements of TS section 3.7.K.1 are consistent with the requirements of STS section 3.6.5.2. Specifically:

- TS section 3.7.K.1 is consistent with STS 3.6.5.2. The applicability, however, is DAEC-specific and the list of applicable valves/dampers is not included in the TS but will be incorporated into an administrative procedure.
- TS section 3.7.K.2 (including subitems a., b., and c.) are consistent with actions a., b., and c., of STS sections 3.6.5.2. A note, however, has been added to TS section 3.7.K.2.c. This note is consistent with the note for closed/isolated primary containment isolation valves.

TS section 3.7.K.3 is consistent with the shutdown action statement of STS section 3.6.5.2. The requirement to suspend reactor building fuel cask and irradiated fuel movement is consistent with TS section 3.7.J.2.a.

TS section 4.7.K "Secondary Containment Automatic Isolation Dampers", has been added. This surveillance requirement was not previously required by DAEC TS. The surveillance requirement of TS section 4.7.K is consistent with the surveillance requirements of STS section 4.6.5.2 except that surveillance requirements a. and c. of STS section 4.6.5.2 are not included. (Post-maintenance testing has not historically been included in DAEC TS.) Specifically:

- TS section 4.7.K.1 is consistent with STS section 4.6.5.2.b.

- 3.7-19 TS section 3.7.L, "Standby Gas Treatment System," has been added. This new TS section contains the standby gas treatment system requirements previously located in TS section 3.7.B. The reference to TS section 3.7.B.3 has been revised to 3.7.L.3.
- TS section 4.7.L "Standby Gas Treatment System", has been added. This new TS section contains the standby gas treatment system surveillance requirements previously located in TS section 4.7.B.
- TS section 4.7.L.1.b has been revised to require that the inlet heaters of each train be capable of an output of at least 22kw. The previous TS requirement was 11 kw.
- TS section 4.7.L.1.c has been revised to require that the air distribution demonstration be performed "after each complete or partial replacement of the HEPA filter bank or after any structural maintenance on the system housing." This test was previously required to be performed annually.
- In TS section 4.7.L.1.g, the reference to TS section 3.7.B.2.b. has been revised to 3.7.L.2.b.
- In TS section 4.7.L.2.a, the reference to TS section 3.7.B.2 has been revised to 3.7.L.2.
- 3.7-20 TS section 3.7.L.3 contains the requirements previously located in TS section 3.7.B.3. The wording has been revised for consistency. Specifically:
- The wording "HOT SHUTDOWN within 12 hours" has been revised to "HOT SHUTDOWN within the next 12 hours".
 - The wording "suspend fuel handling operations" has been revised to "suspend reactor building fuel cask and irradiated fuel movement." This wording is consistent with TS sections 3.7.J and 3.7.K.
- 3.7-21 TS section 3.7.M, "Mechanical Vacuum Pump" has been added. This new TS section contains the mechanical vacuum pump requirements previously located in TS section 3.7.F.
- In TS section 3.7.M.3, the references to TS sections 3.7.F.1 and 3.7.F.2 have been revised to 3.7.M.1 and 3.7.M.2.
- TS section 4.7.M, "Mechanical Vacuum Pump" has been added. This new TS section contains surveillance requirements previously located in TS section 4.7.F.
- 3.7-22 The Bases for TS sections 3.7.A and 4.7.A has been changed from "Primary Containment" to "Primary Containment Integrity." A discussion of the requirement to restore

primary containment within 1 hour in the event primary containment is inoperable has been added. The Bases information has been reorganized for clarity.

- 3.7-24 The Bases for TS sections 3.7.B and 4.7.B, "Primary Containment Power Operated Isolation Valves", contains the information previously located in Bases section 3/4.7.A.8. This information has been reorganized for clarity.
- 3.7-26 A discussion of the actions to be taken in the event that one or more primary containment isolation valves are inoperable has been added to the Bases of section 3.7.B and 4.7.B.
- The Bases for TS sections 3.7.C and 4.7.C, "Drywell Average Air Temperature" has been added to provide additional information on this new specification.
- 3.7-27 The Bases for TS sections 3.7.D and 4.7.D, "Pressure Suppression Chamber - Reactor Building Vacuum Breakers" contains the information previously located in Bases section 3/4.7.A.3. This section has been expanded to provide additional information specific to these vacuum breakers.
- 3.7-28 The Bases for TS sections 3.7.E and 4.7.E, "Drywell-Pressure Suppression Chamber Vacuum Breakers" contains the information previously located in Bases section 3/4.7.A.3. This section has been expanded to provide additional information specific to these vacuum breakers.
- 3.7-29 The Bases for TS sections 3.7.F and 4.7.F, "Main Steam Isolation Valve Leakage Control System (MSIV-LCS)" contains the information previously located in Bases section 3/4.7.E.
- 3.7-30 The Bases for TS sections 3.7.G and 4.7.G, "Suppression Pool Level and Temperature" contains the information previously located in Bases sections 3/4.7.A.1, 3/4.7.A.5, and 3/4.7.A.8. This information has been reorganized for clarity. Additional details regarding the bases for the maximum suppression pool volume and equivalent indicated levels has been added.
- 3.7-32 The requirement to maintain the suppression pool temperature "below" the normal operating limit of 95°F has been changed to "at or below" the normal operating limit of 95°F. This change is consistent with TS section 3.7.G.2.a.
- 3.7-33 The reference to Bases section 3.7.A.1 (previously located in the first paragraph of previous TS page 3.7-48a) has been deleted.

The discussion of the daily suppression pool level and temperature surveillance previously located in the first

paragraph of the Bases section 3/4.7.A.4, "Leak Rate Testing" (but applicable to suppression pool level and temperature) has been deleted. This information is redundant to the surveillance discussion already included in the Bases for section 3.7.G and 4.7.G.

- 3.7-34 The Bases for TS sections 3.7.H and 4.7.H, "Containment Atmosphere Dilution" contains the information previously located in the Bases for sections 3/4.7.A.6.
- 3.7-35 The Bases for TS sections 3.7.I and 4.7.I, "Oxygen Concentration", contains the information previously located in Bases section 3/4.7.A.2.
- 3.7-36 Additional information has been added to the Bases for TS section 3.7.I and 4.7.I stating that the CAD system is not required to be operable during drywell inspections and when the containment is not inerted. This note is consistent with the note added to TS section 3.7.I.

The discussion of oxygen monitoring in the last paragraph of the Bases for TS sections 3.7.I and 4.7.I has been changed from "twice a week" to "once per week". This corresponds to revised surveillance requirement 4.7.I.1.

The Bases for TS sections 3.7.J and 4.7.J, "Secondary Containment" contains the information previously located in Bases section 3/4.7.A.7.

- 3.7-37 The Bases for TS sections 3.7.K and 4.7.K, "Secondary Containment Automatic Isolation Dampers", has been added to provide additional information on this new specification.
- 3.7-38 The Bases for TS sections 3.7.L and 4.7.L, "Standby Gas Treatment System" contains the information previously contained in Bases section 3/4.7.A.7. The previous reference to TS section 3.7.B.3 has been changed to TS section 3.7.L.3.
- 3.7-39 The Bases for TS section 3.7.L and 4.7.L, "Standby Gas Treatment System", has been revised to clarify the in-place and laboratory tests performed on the system. Specifically, the previous reference to "less than 1 percent bypass leakage" for the charcoal adsorbers has been changed to " \leq 0.1 percent bypass leakage" for the charcoal adsorbers. This change is consistent with the requirements of TS sections 3.7.L.2.a. The discussion of laboratory carbon sample test results previously described a radioactive methyl iodide removal efficiency of "at least 99.9 percent for expected accident conditions." This has been changed to "at least 99% for expected accident conditions." This change is consistent with the requirements of TS section 3.7.L.2.b.

- 3.7-40 The description of standby gas treatment system (SGTS) inlet heater capacity in Bases sections 3.7.L and 4.7.L has been revised from 11kw to 22kw. This change is consistent with revised TS section 4.7.L.1.b.
- A specific discussion of the engineering evaluation regarding the effects of differing wind speeds on SGTS testing has been added to the Bases of TS sections 3.7.L and 4.7.L.
- 3.7-41 The Bases for TS sections 3.7.M and 4.7.M "Mechanical Vacuum Pump", contains the information previously located in Bases sections 3.7.F and 4.7.F.
- 3.7-42 Previous TS page number 3.7-49 has been renumbered to page 3.7-42.
- 3.7-43 Previous TS page number 3.7-50 has been renumbered to page 3.7-43.
- Previous TS page 3.7-20 has been deleted.