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August 2, 2006

U. S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, D. C. 20555-0001

Subject: Duke Power Company LLC d/b/a Duke Energy Carolinas, LLC
Oconee Nuclear Site, Units 1, 2, and 3
Docket Numbers 50-269, 50-270, and 50-287
License Amendment Request for Allowing Use of Atmospheric Dump Valves to Control Main Steam Pressure During a Standby Shutdown Facility Event (TSC 2006-07)

Duke Power Company LLC d/b/a Duke Energy Carolinas, LLC (Duke) hereby submits a license amendment request for the Oconee Nuclear Station (ONS) Renewed Facility Operating License (FOL) pursuant to 10 CFR 50.90. This request proposes a new safety enhancement for ONS Units 1, 2 and 3. The enhancement involves implementing a manual function to control main steam (MS) pressure through use of the atmospheric dump valves (ADVs) during a Standby Shutdown Facility (SSF) event; thereby, reducing cycling on the main steam relief valves (MSRVs).

In a conference call on April 11, 2006, Duke discussed with the Nuclear Regulatory Commission (NRC) issues surrounding MSRV cycling. To resolve these issues, Duke introduced the proposed enhancement stated above.

Duke's current licensing basis indicates that the SSF is licensed for control of MS pressure only by action of the MSRVs. The proposed enhancement involves allowing manual action to control MS pressure with ADVs. NRC review and approval of this safety enhancement is requested by November 1, 2006. There are no commitments being made as a result of this amendment. A 60 day implementation window is requested.

Duke has also provided mark-ups of the Technical Specification Bases and the Oconee Updated Final Safety Analysis Report (UFSAR). Duke will update the applicable sections of the UFSAR per 10 CFR 50.71(e).

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In accordance with Duke administrative procedures and the Quality Assurance Program Topical Report, these proposed changes have been reviewed and approved by the Plant Operations Review Committee and Nuclear Safety Review Board. Additionally, a copy of this license amendment request is being sent to the State of South Carolina in accordance with 10 CFR 50.91 requirements.

Inquiries on this proposed amendment request should be directed to Reene' Gambrell of the ONS Regulatory Compliance Group at (864) 885-3364.

Sincerely,

James R. Morris
Vice President, Nuclear Support

Enclosures:
1. Notarized Affidavit
2. Evaluation of Proposed Change

Attachments:

1. Updated Final Safety Analysis Report – Mark Up
2. Technical Specifications Bases – Mark Ups
3. Technical Specifications Bases - Reprinted Pages

bc w/enclosures and attachments:

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ENCLOSURE 1

NOTARIZED AFFIDAVIT

AFFIDAVIT

James R. Morris, being duly sworn, states that he is Vice President, Nuclear Support, Duke Power Company LLC d/b/a Duke Energy Carolinas, LLC, and that he is authorized on the part of said Company to sign and file with the U. S. Nuclear Regulatory Commission this revision to the Renewed Facility Operating License Nos. DPR-38, DPR-47, and DPR-55; and that all statements and matters set forth herein are true and correct to the best of his knowledge.

James R Morris

James R. Morris, Vice President
Nuclear Support

Subscribed and sworn to before me this 2ND day of August, 2006

Heather Paige Blum
Notary Public

HEATHER PAIGE BLUM
Official Seal
Notary Public - North Carolina
Mecklenburg County
My Comm. Expires Jan. 9, 2008

My Commission Expires:

1-9-2008
Date

SEAL

ENCLOSURE 2

EVALUATION OF PROPOSED CHANGE

Subject: License Amendment Request for Allowing Use of Atmospheric Dump Valves to Control Main Steam Pressure During a Standby Shutdown Facility Event

1.0 DESCRIPTION

Duke Power Company LLC d/b/a Duke Energy Carolinas, LLC (Duke) is submitting this request for amendment to Oconee Nuclear Station (ONS) Renewed Facility Operating License (FOL) pursuant to 10 CFR 50.90. This License Amendment Request (LAR) proposes a new safety enhancement for ONS Units 1, 2 and 3. The enhancement involves implementing a manual function to control main steam (MS) pressure through use of the atmospheric dump valves (ADVs) during a Standby Shutdown Facility (SSF) event; thereby, reducing cycling on the main steam relief valves (MSRVs).

In a conference call on April 11, 2006, Duke discussed with the Nuclear Regulatory Commission (NRC) issues surrounding MSRV cycling. To resolve these issues, Duke introduced the proposed enhancement stated above.

Duke's current licensing basis indicates that the SSF is licensed for control of MS pressure only by action of the MSRVs. The proposed enhancement involves allowing manual action to control MS pressure with ADVs. NRC review and approval of this safety enhancement is requested.

Duke has also provided mark-ups of the Technical Specification (TS) Bases and the Oconee Updated Final Safety Analysis Report (UFSAR). Duke will update the applicable sections of the UFSAR per 10 CFR 50.71(e).

2.0 PROPOSED CHANGE

In the event where shutdown is required from the SSF, Steam Generator (SG) pressure is controlled by spring-type code relief valves, MSRVs. These valves relieve to atmosphere off the MS header of each SG and are expected, based on operating history, to perform as designed to maintain the SG within an acceptable pressure range for SSF operation.
The Oconee Licensing Basis will continue to take credit for this automatic action, but will be changed to allow usage of the MS ADVs to control MS pressure during an SSF event, if desired. This involves allowing an additional operator action i.e., steaming affected steam generator(s) through ADV flow path(s). Nuclear Regulatory Commission (NRC) review and approval is requested.

This change involves revision of the TS Bases and the UFSAR as described below.

TS Bases 3.7.4, Atmospheric Dump Valves Flow Path

The BACKGROUND of the Bases will be revised to reflect the following:

> During an accident that requires operation of the SSF, the ADV flow path for each SG may be used to reduce and control MS System pressure at a pressure that is below the set pressure for the MSRVs. This action is intended to reduce the number of times that the MSRVs lift and reseat.

The APPLICABLE SAFETY ANALYSIS of the Bases will be revised to reflect the following:

> The ADV flow path for each SG may be used to reduce MS system pressure below the set pressure of the MSRVs. This will have the effect of reducing the number of times that the MSRVs cycle open and closed during an accident that requires operation of the SSF. When the ADV flow path is used to control MS system pressure, local MS pressure instrumentation at the ADVs shall be available and communication with the SSF Control Room shall be established to ensure that proper pressure control is established and maintained.

The APPLICABILITY of the Bases is being revised to reflect the following:

> Though the ADV flow path for each SG may be used if available to reduce MS system pressure below the set pressure of the MSRVs during an accident that requires operation of the SSF, this capability of the ADVs to reduce MSRV cycling in an SSF event is not required for the ADVs to be OPERABLE, and ADV flow paths are not required for the SSF to be considered OPERABLE.

TS Bases 3.10.1, Standby Shutdown Facility

The Bases Limiting Condition of Operation (LCO) is being revised to reflect the following:

> During an accident that requires operation of the SSF, the reactor decay heat removal function is accomplished by establishing natural circulation conditions through the Steam Generators and relieving steam via the MSRVs. The ADVs may be used to lower MS system pressure below the set pressure for the MSRVs. In order to ensure that the net SSF RC makeup system flow rate provided to the Reactor Coolant System (RCS) during an SSF event is adequate to offset volume shrinkage caused by decreasing MS system pressure with the ADVs, total combined RCS leakage (as monitored during normal operation) is required to be

≤ 12.0 GPM for operation of the ADVs.

UFSAR Section 9.6.4.6.2, SSF Fire Protection Performance Goals

UFSAR Section 9.6.4.6.2 is being revised to reflect the following:

> If an ADV flow path which contains non QA-1 equipment is available as an alternate flow path for controlling MS system pressure, MS system pressure may be reduced and controlled at a pressure that is below the set pressure for the MSRVs. This action will reduce the number of times that the MSRVs lift and reseat.
>
> Local MS pressure instrumentation at the ADVs shall be available and communication with the SSF Control Room shall be established, when the ADV flow path is used to control MS System Pressure, to ensure that proper pressure control is established and maintained.

UFSAR Section 10.3.2, Main Steam System Description

UFSAR Section 10.3.2 is being revised to reflect the following:

> During an accident that requires operation of the SSF, the reactor decay heat removal function is accomplished by establishing natural circulation conditions through the Steam Generators and relieving steam via the MSRVs. If an ADV flow path which contains non QA-1 equipment is available as an alternate flow path for controlling MS System pressure, MS System pressure may be reduced and controlled at a pressure that is below the set pressure for the MSRVs. This action will reduce the number of times that the MSRVs lift and reseat.

3.0 BACKGROUND

SSF System Description

The SSF is designed as a standby system for use under extreme emergency conditions. The system provides additional "defense in-depth" protection for the health and safety of the public by serving as a backup to existing safety systems. The SSF is provided as an alternate means to achieve and maintain Mode 3 with an average Reactor Coolant (RC) temperature ≥ 525°F (unless the initiating event causes the unit to be driven to a lower temperature) following postulated fire, sabotage, or flooding events, and is designed in accordance with criteria associated with these events. Loss of all other station power does not impact the SSF's capability to mitigate each event. The SSF is also credited as the alternate AC power source and the source of decay heat removal (DHR) required to demonstrate safe shutdown during the required station blackout coping duration. In that the SSF is a backup to existing safety systems, the single failure criterion is not required. However, failures in the SSF systems will not cause failures or inadvertent operations in existing plant systems. The SSF requires manual activation and would be activated under adverse fire, flooding or sabotage conditions when existing redundant emergency systems are not available. During an accident that requires operation of the SSF, the reactor decay heat removal function is accomplished by establishing natural circulation conditions through the Steam Generators and relieving steam via the MSRVs.

The SSF Auxiliary Service Water (ASW) System is a high head, high volume system designed to provide sufficient SG inventory for adequate decay heat removal for three units during a loss of normal AC power in conjunction with the loss of the normal and emergency feedwater systems. One motor driven SSF ASW pump, located in the SSF, serves all three units. The ASW pump suction supply is lake water from the embedded Unit 2 condenser circulating water (CCW) piping.

The SSF Reactor Coolant Makeup (RCMU) System is designed to supply borated makeup to the RCS to provide RC Pump Seal cooling and RCS inventory. An SSF RCMU Pump located in the Reactor Building of each unit will supply makeup to the RCS should the normal makeup system and the reactor coolant pumps become inoperable because of a station blackout condition caused by the loss of all other on-site and off-site power. The system is designed to ensure that sufficient borated water is available from the spent fuel pools to allow the SSF to maintain Mode 3 with an average RC temperature $\geq$ 525°F (unless the initiating event causes the unit to be driven to a lower temperature) for all three units for approximately 72 hours.

MSRV Description:

Eight self-actuated safety relief valves are located on each main steam line (a total of sixteen) to prevent overpressurization of the MS system under all conditions. The valves are designed to pass 105 percent of the Engineered Safeguard Design steam flow at a pressure not exceeding 110 percent of the system design pressure (1050 psig).

Pressure relief is required at the system design pressure of 1050 psig, and the first MSRV valve on each MS line will be set to relieve at this pressure. The design pressure is based on the operating pressure of 925 psia plus a 10 percent allowance for transients and a 4 percent allowance for blowdown. Additional MSRVs are set at pressures up to 1104 psig, as allowed by the ASME Code. Pressure relief is provided by eight MSRVs on each MS line, and the valve relief pressures are:

Number of Valves	Relief Pressure (psig)	Allowable Relief Pressures (psig)
1	1050	1018 - 1061
1	1065	1033 - 1076
1	1080	1048 - 1091
1	1090	1057 - 1101
2	1100	1067 - 1111
2	1104	1070 - 1115

The relief valve capacity is such that the energy generated at the reactor high power level trip setting can be dissipated through this system.

ADV Description:

The ADV flow paths provide a method for cooling the unit to DHR entry conditions, should the preferred heat sink via the Turbine Bypass System to the condenser not be available. This is done in conjunction with secondary cooling water from the Emergency Feedwater System.

The ADVs are located in the Turbine Building inside the Protected Area. There are minimal combustible materials in the area of the ADVs. The ADVs are not considered to be damaged by a fire and are used for plant cooldown in accordance with 10 CFR 50 Appendix R.

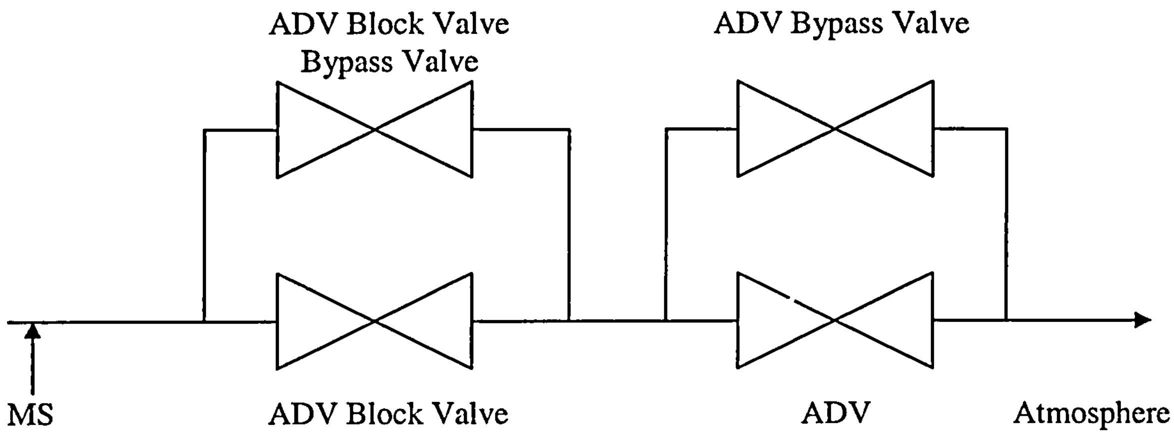
The steam generator tube rupture (SGTR) analysis already credits operator action to depressurize the steam generators by opening each of the ADV flow paths.

Additionally, the ADV flow path for each SG is credited as a compensatory measure in TS 3.5.2, "High Pressure Injection (HPI)." In certain HPI configurations, the ADV flow path for one steam generator is credited to depressurize the steam generator and enhance primary-to-secondary heat transfer during certain small break loss of coolant accidents (LOCAs). This is done in conjunction with the EFW System providing cooling water to the steam generator.

For each SG (reference Figure 1), the ADV flow path is comprised of the ADV block valve bypass valve, the ADV block valve, the ADV, and the ADV bypass valve. The ADV and the ADV bypass valve are in parallel and are located downstream of the ADV block valve. The ADV block valve bypass valve is opened first to equalize the differential pressure across the ADV block valve. When cooldown is to be conducted, the ADV block valve is opened, and the cooldown rate is controlled using the ADV.

The ADV bypass valve is not needed for controlling MS pressure to reduce MSRV cycling. However, during an SSF Appendix R event, the ADV bypass valve may be used later in the event to provide additional flow above the flow rate provided through the ADV to allow plant cooldown.

Figure 1
ATMOSPHERIC DUMP VALVE OPERATION



Statement of Problem:

During an SSF event where the MSRVs are being used to control MS pressure, it is expected that they could cycle many times. The MSRV manufacturer, Anderson Greenwood Crosby, was consulted to determine if the MSRVs are capable of performing their design basis function during an accident that requires operation of the SSF given the number of times that they must cycle open and closed. The manufacturer verbally stated that "if the valve were subjected to this type of scenario, there would be a potential for seat leakage but there should be no concern structurally." This statement is based on testing performed on a similar Safety Relief Valve, specifically, an AG Crosby HB-BP-DF (Safety Relief Valve installed on Boiling Water Reactor (BWR) applications) where the valve was cycled up to approximately 200 times. Following testing, there was some minor seat leakage but no structural damage.

MSRV cycling can be reduced if an alternate method of controlling MS header pressure is provided. Usage of the ADVs would serve as an additional action to control MS system pressure; thereby reducing MSRV cycling.

Duke's current licensing basis indicates that MS pressure control is by MSRVs and requires no operator action. The proposed function involves a manual action and uses non-safety related components to accomplish the action. NRC review and approval of the safety enhancement is requested.

4.0 TECHNICAL ANALYSIS

During an accident that requires operation of the SSF, MSRVs with the lowest set point will lift and reseat as needed to control MS header pressure. The number of times that the MSRVs are cycled can be reduced if an alternate method of controlling MS header pressure is provided. If the non-Safety Related ADV flow path is available, MS system pressure can be controlled so that MSRV lift frequency is reduced.

An ADV flow path is provided for each unit's two MS lines. The ADV flow path consists of the ADV block valve bypass valve, the ADV block valve, the ADV, and the ADV bypass valve. The ADV and the ADV bypass valve are in parallel and are located downstream of the ADV block valve. Each valve is chain operated and does not possess position indicators.

MS flow through the ADVs will be controlled by throttling the ADVs such that MSRV cycling is reduced and decay heat removal requirements are met. The valves in the ADV flow paths are operated in the manner described below to control MS system pressure:

a. The ADV block valve bypass valve is opened to equalize pressure around the ADV block valve.
b. The ADV block valve is opened to provide a flow path from the MS system to the inlet of the ADV.
c. The ADV is slowly throttled open to gradually reduce MS system pressure so that the MSRV lift frequency is decreased.
d. If desired, the ADV is slowly throttled open until the MSRV cycling has stopped.
e. The ADV is throttled closed as needed to maintain the required steam generator pressure and pressurizer level as RCS decay heat load decreases.

Currently, the surveillance requirement of TS 3.7.4, ADV Flow Paths, cycles the valves that comprise the ADV flow paths on an 18 month frequency. The MS ADVs Functional Test demonstrates the ability to open the ADV flow paths at normal MS pressure. The flow paths that are tested are comprised of the ADV block valve bypass valve, the ADV block valve, and the ADV. The testing is required to be performed every fifth refueling outage with RCS average temperature at 532°F and MS pressure at 885 psig. The test requires communications be established between the Control Room and the personnel in the field. The test is conducted by:

a. Opening the ADV block valve bypass valve;
b. Opening the ADV block valve;
c. Closing the ADV block valve; and
d. Opening the ADV until steam flow is detected.

A review of the ADV block valve bypass valve, the ADV block valve, and the ADV design shows that these valves are capable of opening and closing when MS system pressure is less than or equal to the set pressure of the MSRV with the lowest setpoint.

Though a portion of the ADV flow path was not purchased as Safety Related, the ADV flow path piping is seismically restrained. The valves in the ADV flow path are manual valves and are considered to be inherently rugged. The manual valves were determined to be seismically adequate and will perform their design function following a Design Basis Earthquake.

As stated above, the ADVs are located in the Protected Area and would be available following a fire. In addition, safety related local MS pressure gauges have been installed at the ADVs. Should a fire or other occurrence damage those gauges, they could be replaced by additional gauges which are stored in the SSF for this purpose.

The ADV flow path is not designed to withstand a single failure. This is consistent with the design of the SSF ASW System and other systems that support operation of the SSF ASW system, including the MSRVs.

Operation of the ADV flow paths to control MS system pressure during an accident that requires operation of the SSF ASW System is not a time critical action. Implementation of this guidance will not occur until plant conditions allow (fire; security), required personnel are available, and required MS pressure instrumentation is available.

The operator actions required will be included in the SSF Emergency Operating Procedure (SSF EOP). These reasonable operator actions (i.e., MS pressure control through an ADV flow path) are new to the SSF event and the licensing basis.

When the ADVs are used to control MS system pressure during an accident that requires operation of the SSF ASW System, the following guidance shall be met to ensure that pressurizer level will be maintained above the SSF controlled pressurizer heaters, RCS natural circulation flow will be maintained, and RCS temperature and pressure will be controlled to maintain adequate shutdown margin and subcooling:

1. Communications shall be established between the ADV operators and the SSF Control Room Operator (or the Main Control Room if available).

   Nuclear Equipment Operators (NEOs) dispatched to operate the ADVs will have direct communication (e.g., radio) with the SSF Control Room. The NEOs will slowly throttle open the ADV based on guidance provided by the SSF Control Room. Once the ADV is throttled to the position required for controlling MS system pressure, one NEO per affected unit is required to remain with the ADVs for throttling purposes. As RCS decay heat load decreases, the ADV valves will be throttled closed as needed to maintain the required MS system pressure.

2. In order to reduce or eliminate cycling of the MSRVs, the ADVs will be throttled open to slowly reduce MS system pressure while maintaining pressurizer level and MS system pressure above the operating limits described below:

   a. Minimum required pressurizer level.

      Pressurizer level will be monitored while reducing MS system pressure because a reduction in MS pressure causes the saturation temperature in the corresponding steam generator to decrease. If steam generator level has been established and is maintained when MS pressure is reduced, a reduction in steam generator saturation temperature will result in a decrease in Tcold in the RCS. When Tcold decreases, RCS volume shrinkage that could affect pressurizer level will occur. Operating limits for pressurizer level are established to provide operating/ design margin for maintaining water level in the pressurizer above the SSF controlled pressurizer heaters.

   b. Minimum required MS system pressure

      Once SG level has been established, a reduction in saturation pressure in the MS system will cause the saturation temperature in the corresponding SG to decrease. If SG saturation temperature is decreased while level in the SGs is maintained, Tcold in the RCS will decrease. The resulting RCS volume shrinkage could cause pressurizer level to decrease. Therefore, a lower limit for MS system pressure is established for controlling MS system flow using the ADVs.

      If Main Steam pressure could not be maintained above the minimum required pressure with the ADVs, the ADV flow path would be isolated.

3. To ensure that the net SSF RC makeup system flow rate provided to the RCS during an SSF event is adequate to offset volume shrinkage caused by decreasing main steam system pressure with the ADVs, total combined RCS leakage limits are defined for operation of the ADVs.

The following events already take credit or allow the usage of ADVs as a means to depressurize the SG:

The SGTR analysis credits operator action to depressurize the SGs by opening each of the ADV flow paths.

The ADV flow path for each SG is credited as a compensatory measure in TS 3.5.2, "High Pressure Injection (HPI)." In certain HPI configurations, the ADV flow path for one steam generator is credited to depressurize the steam generator and enhance primary-to-secondary heat transfer during certain small break loss of coolant accidents (LOCAs). This is done in conjunction with the EFW System providing cooling water to the steam generator.

Selected Licensee Commitment (SLC) 16.9.9 requires operability of the ADVs for Auxiliary Service Water (ASW) OPERABILITY. The ADVs must be opened to depressurize the steam generators to allow the low-head ASW pump to supply water to the steam generators for a tornado or loss of Lake Keowee event.

5.0 REGULATORY SAFETY ANALYSIS

5.1 No Significant Hazards Consideration

Pursuant to 10 CFR 50.91, Duke has made the determination that this amendment request involves a No Significant Hazards Consideration by applying the standards established by Nuclear Regulatory Compliance regulations in 10 CFR 50.92. This ensures that 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.

   No. During an accident that requires operation of the Standby Shutdown Facility, decay heat removal is accomplished by natural circulation in the Reactor Coolant System, heat transfer through the steam generators and heat removal by relieving steam through the Main Steam Relief Valves. Under this proposed change, some of the heat removal could also be accomplished by passing steam through the Atmospheric Dump Valves. Use of the Atmospheric Dump Valves to reduce Main Steam Relief Valve cycling in a Standby Shutdown Facility event has no impact upon the probability of any event mitigated by the Standby Shutdown Facility or any other previously evaluated accident. Use of the Atmospheric Dump Valves to reduce Main Steam Relief Valve cycling in a Standby Shutdown Facility event could be postulated to increase the consequences of the event by overcooling the Reactor Coolant System should the Atmospheric Dump Valves or operators fail in some manner, but the Atmospheric Dump Valve flow path could be isolated to eliminate the problem and allow recovery so that no increased consequences would actually occur. Further, the probability of such a failure or problem with the Atmospheric Dump Valves is considered to be extremely low for reasons described below.

The Atmospheric Dump Valves are seismically restrained and are considered to be inherently rugged. Use of Atmospheric Dump Valves to reduce Main Steam Relief Valve cycling would not be undertaken until conditions (fire; security) at the Atmospheric Dump Valves allowed, personnel were available, and local Main Steam pressure indications were confirmed to be available (or restored). Use of the Atmospheric Dump Valves is not complex for operators; it involves slow, deliberate throttling of the Atmospheric Dump Valves while observing the effect upon Main Steam Relief Valve cycling and/or Main Steam pressure. Procedures and operator training for Atmospheric Dump Valve control of Main Steam pressure in other events have been provided for many years. The procedure for use of Atmospheric Dump Valves to reduce Main Steam Relief Valve cycling in a Standby Shutdown Facility event would make use of safety related local Main Steam pressure gauges and would include communication with the Standby Shutdown Facility control room, ensuring positive control of Main Steam pressure within limits.

Use of the Atmospheric Dump Valves in this manner is considered to improve overall event mitigation capability because it provides another means, other than Main Steam Relief Valves, for heat removal and Main Steam pressure control in a Standby Shutdown Facility event. Use of the Atmospheric Dump Valves to reduce Main Steam Relief Valve cycling decreases the challenge of this required function of the Main Steam Relief Valves by using the non-required Atmospheric Dump Valves for the same function. Any problem with Atmospheric Dump Valve control would be recoverable by isolating the Atmospheric Dump Valve flow path, at which point the Main Steam Relief Valves would continue to function to remove heat and control Main Steam pressure.

Therefore, the proposed change does not 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.

No. Use of Atmospheric Dump Valves to reduce Main Steam Relief Valve cycling will not change the initial plant response wherein the Main Steam Relief Valves cycle to control Main Steam pressure. The proposed change would allow for subsequent use of the Atmospheric Dump Valves, if desired, to reduce Main Steam Relief Valve cycling by passing some steam flow through the Atmospheric Dump Valves. Any possibility of a new or different kind of accident would be associated with Main Steam pressure control. The Standby Shutdown Facility licensing basis does not require consideration of a single failure, thus no failure of a Main Steam Relief Valve is postulated which could affect Main Steam pressure control. Similarly, no failure of an Atmospheric Dump Valve or Atmospheric Dump Valve control would be postulated, and no possibility of a new or different kind of accident would be created.

Beyond single failure considerations, the Atmospheric Dump Valves are licensed for use in other event scenarios, are seismically restrained, are considered to be inherently rugged and would be available following a fire. The manner of using the Atmospheric Dump Valves to reduce Main Steam Relief Valve cycling would make any consequential failure or problem extremely unlikely, as described under (1) above. The procedure for use of Atmospheric Dump Valves to reduce Main Steam Relief Valve cycling in a Standby Shutdown Facility event would make use of safety related local Main Steam pressure gauges and measures will be established for communication with the Standby Shutdown Facility control room, ensuring positive control of Main Steam pressure within limits. The Atmospheric Dump Valve flow path could be isolated should any problem with Atmospheric Dump Valve control arise.

Therefore the proposed change does not create the possibility of a new or different kind of accident from any accident previously evaluated.

3) Involve a significant reduction in a margin of safety.

No. Operating limits associated with Atmospheric Dump Valve control of Main Steam pressure at or slightly below the Main Steam Relief Valve set pressure would ensure that pressurizer level would be maintained above the Standby Shutdown Facility controlled pressurizer heaters, the Reactor Coolant System would remain subcooled and Reactor Coolant System temperature would remain above 525°F so that shutdown margin would be maintained. Therefore the proposed change does not involve a significant reduction in a margin of safety.

5.2 Applicable Regulatory Requirements/Criteria

5.2.1 Oconee Updated Final Safety Analysis Report (UFSAR) 9.6.4.6.2

SG pressure should be regulated by the main steam code safety valves, which will relieve at their setpoints.

5.2.2 SSF Safety Evaluation Report dated 4/28/83

Decay heat removal can be accomplished by releasing steam from the steam generators via the atmospheric main steam code relief valves.

5.2.3 Technical Specifications

3.7.4 – Atmospheric Dump Valves

The steam generator tube rupture (SGTR) analysis credits operator action to depressurize the SGs by opening each of the ADV flow paths.

3.5.2 - High Pressure Injection

The ADV flow path for each SG is credited as a compensatory measure in TS 3.5.2, "High Pressure Injection (HPI)." In certain HPI configurations, the ADV flow path for one SG is credited to depressurize the SG and enhance primary-to-secondary heat transfer during certain small break loss of coolant accidents (LOCAs). This is done in conjunction with the Emergency Feedwater System providing cooling water to the SG.

5.2.4 Selected Licensee Commitments

16.9.9. Auxiliary Service Water System and Main Steam Atmospheric Dump Valves

OPERABILITY of the ADVs are required to support Auxiliary Service Water (ASW) OPERABILITY. The ADVs must be opened to depressurize the steam generators to allow the low-head ASW pump to supply water to the steam generators for a tornado or loss of Lake Keowee event.

6.0 ENVIRONMENTAL CONSIDERATION

Duke has evaluated this license amendment request against the criteria for identification of licensing and regulatory actions requiring environmental assessment in accordance with 10 CFR 51.21. Duke has determined that this license amendment request meets the criteria for a categorical exclusion set forth in 10 CFR 51.22(c)(9). This determination is based on the fact that this change is being proposed as an amendment to a license issued pursuant to 10 CFR 50 that changes a requirement with respect to installation or use of a facility component located within the restricted area, as defined in 10 CFR 20, or that changes an inspection or a surveillance requirement, and the amendment meets the following specific criteria.

(i) The amendment involves no significant hazards consideration.

As demonstrated in Section 5.1, this proposed amendment does not involve significant hazards consideration.

(ii) There is no significant change in the types or significant increase in the amounts of any effluent that may be released offsite.

Allowing use of the ADVs to control Main Steam Pressure would be equivalent to the MSRV cycling. Therefore, there will be no significant change in the types or significant increase in the amounts of any effluents released offsite.

(iii) There is no significant increase in individual or cumulative occupational radiation exposure.

Allowing use of the ADVs to control MS pressure would be equivalent to the MSRV cycling. Therefore, there will be no significant increase in individual or cumulative occupational radiation exposure resulting from this change.

ATTACHMENT 1

UPDATED FINAL SAFETY ANALYSIS REPORT MARK-UP

UFSAR Markup for operation of ADVs during an SSF Event

A. Insert the following statement at the location shown on the marked-up copy of UFSAR Section 10.3.2 :

During an accident that requires operation of the SSF, the reactor decay heat removal function is accomplished by establishing natural circulation conditions through the steam generators and relieving steam via the Main Steam Relief Valves. If an ADV flow path which contains non QA-1 equipment is available as an alternate flow path for controlling Main Steam system pressure, Main Steam system pressure may be reduced and controlled at a pressure that is below the set pressure for the Main Steam Relief Valves. This action will reduce the number of times that the Main Steam Relief Valves lift and reseat.

B. Insert the following statement at the location shown on the marked-up copy of UFSAR Section 9.6.4.6.2 :

If an Atmospheric Dump Valve flow path which contains non QA-1 equipment is available as an alternate flow path for controlling Main Steam system pressure, Main Steam system pressure may be reduced and controlled at a pressure that is below the set pressure for the Main Steam Relief Valves. This action will reduce the number of times that the Main Steam Relief Valves lift and reseat.

Local Main Steam pressure instrumentation at the Atmospheric Dump Valves shall be available and communication with the SSF Control Room shall be established, when the Atmospheric Dump Valve flow path is used to control Main Steam System Pressure, to ensure that proper pressure control is established and maintained.

turbine stop valves and the main and emergency feedwater line valving. Each of the lines utilized for normal operation leaving the main steam lines before the turbine stop valves has motor operated valves to complete the isolation of a steam generator. These lines are:

1. Steam bypass to condenser and steam supply for auxiliary steam header (See Figure 10-1 for line to auxiliary steam header)
2. Supply to feedwater pump turbines and condenser air ejectors
3. Supply to steam reheaters
4. Supply to emergency feedwater pump turbine.

The arrangement of the valving and parallel piping shown schematically in Figure 10-1 minimizes blowdown of both steam generators from a single leak in the system with the assumption that the turbine stop valves close. For a majority of the Main Steam system, a postulated piping break would only depressurize one steam generator. However, if the break were to occur in either the steam supply to the auxiliary steam header or the emergency feedwater pump turbine cross-connect, blowdown of both steam generators could result. The motor operated valves that are used to isolate the leak require operator action to close and may not get closed until the steam generators are considerably depressurized. This situation has been analyzed and shown to have consequences that are bounded by the consequences of the accidents in Section 15.13 and Section 15.17.

Normally only one Unit is aligned to supply the Auxiliary Steam System. However, during periods of high steam usage, or when switching from one Unit to the other, multiple Units may be aligned to the Auxiliary Steam System. This situation has been analyzed, and determined that no unreviewed safety question exists (Reference 3).

The steam supply for the emergency feedwater pump turbine (Figure 10-1) will come from either of two sources (the main steam line or the auxiliary steam header) and exhausts to the atmosphere. The solenoid operated valve which controls the steam shutoff valve MS-93 is de-energized on loss of both main feedwater pumps, thus opening the steam shutoff valve. As the steam shutoff valve leaves the closed position, a limit switch starts the emergency feedwater pump turbine bearing oil pump. If a Main Steam Line Break is sensed by the Automatic Feedwater Isolation System, the solenoid valve (MS-SV-0074) will energize thus closing MS-93. MS-95 is designed to fail closed on loss of hydraulic oil pressure. An AFIS actuation will energize and close solenoid valve (TO-145) to isolate the hydraulic oil supply to close MS-95.

The ADV flow path for each steam generator is credited as a compensatory measure in Technical Specification (TS) 3.5.2, "High Pressure Injection (HPI)." In certain HPI configurations, the ADV flow path for one steam generator is credited to depressurize the steam generator and enhance primary-to-secondary heat transfer during certain small break loss of coolant accidents (LOCAs). This is done in conjunction with the EFW System providing cooling water to the steam generator.

Insert A →

10.3.3 Safety Evaluation

The Main Steam System delivers the generated steam from the outlet of the steam generators to the various system components throughout the Turbine Building without incurring excessive pressure losses. Steam is generated at approximately 50°F superheat conditions. Functional requirements of the system are as follows:

1. Achieve optimum pressure drop between the steam generators and the turbine steam stop valves.
2. Assure similar steam conditions between each steam stop valve and between each steam generator.
3. Achieve adequate piping flexibility for acceptable forces and moments at equipment interfaces.

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Depressurization to cold shutdown can be achieved by bypassing steam to the turbine, use of the manual atmospheric dump valves, or pressurizer spray. The low pressure injection (LPI) pumps will be used to remove decay heat. Any damage to either the HPI or LPI power cabling or pump motors can be repaired or replaced within 72 hours.

Also required for cold shutdown are the low pressure service water (LPSW) pumps. Only the one pump for Unit 1 and 2 and one pump for Unit 3 is required for emergency plant operations. Five LPSW pumps of equal capacity are provided - three for Units 1 and 2, and two for Unit 3. These pumps are separated such that a single fire on any unit should not affect all pumps. The piping is separated such that a single fire cannot affect all pumps. The piping for these pumps are interconnected so that they may feed any of the three units. Any damage to the pump motors or associated power cabling can be repaired, or if necessary, replaced within 72 hours.

9.6.4.6.2 Performance Goals

The performance goals for post-fire safe shutdown can be met using the SSF and undamaged/repaired systems and equipment. Cold shutdown can be achieved within 72 hours of a fire by implementing damage control measures including replacement of cables, pump motors, valve operators and use of emergency switchgear. The control of these functions can be then accomplished using the SSF or the control room, in the fire affected unit, depending on the location of the fire. The transfer of control capability between the control room and the SSF is accomplished via a keyed interlock. Annunciation will occur in the SSF control room upon transfer of control.

The process monitoring instruments to be used for a post fire shutdown include reactor coolant hot leg and cold leg temperatures, reactor coolant pressure, pressurizer level and pressure, steam generator level, SSF RC makeup pump flow, and SSF ASW system flow to each unit.

STEAM GENERATOR PRESSURE

Reactor coolant system (RCS) heat removal for achieving mode 3 with an average Reactor Coolant temperature ≥ 525°F can be directly monitored by RCS parameters and controlled by SG level without SG pressure indication, provided that SG pressure is regulated.

Insert B

SG pressure should be regulated by the main steam code safety valves, which will relieve at their setpoints. RCS conditions can be monitored by primary coolant temperature and pressure, pressurizer ~~level and~~ SG level. Should RCS overcooling occur, corrective actions can be taken from the SSF to reinstate proper cooling by controlling the SSF ASW flow rate provided to a unit's SGs in order to restore T-cold.

The SSF is designed to achieve and maintain mode 3 with an average Reactor Coolant temperature ≥ 525°F (RCS cold leg temperature ≤ 555°F and RCS pressure ≃ 2155 psig) for one or more of the three Oconee units. The SSF is not designed to independently bring the reactor from mode 3 with an average Reactor Coolant temperature ≥ 525°F (RCS cold leg temperature ≤ 555°F and RCS pressure ≃ 2155 psig) to cold shutdown. Cold shutdown will be achieved and maintained through the use of normal plant systems and equipment.

SOURCE RANGE FLUX MONITOR

The SSF is designed to achieve and maintain mode 3 with an average Reactor Coolant temperature ≥ 525°F (RCS cold leg temperature ≤ 555°F and RCS pressure ≃ 2155 psig) for any or all of the Oconee units. Prior to leaving the Unit 1/2 or Unit 3 control room, all control rods for the unit under consideration are required to be inserted. No non-borated sources tie into the SSF makeup/boration flow path. RCS makeup and boration following transfer of control to the SSF RCM is from the spent fuel pool. Thus, boron dilution events are highly unlikely.

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ATTACHMENT 2

TECHNICAL SPECIFICATION BASES – MARK-UP

Tech Spec 3.7.4 Bases markup for operation of ADVs during an SSF Event

1. Insert the following statement at the location shown on the marked-up copy of the Tech Spec 3.7.4 Bases:

During an accident that requires operation of the Standby Shutdown Facility (SSF), the ADV flow path for each steam generator may be used to reduce and control Main Steam system pressure at a pressure that is below the set pressure for the main steam relief valves (MSRVs). This action is intended to reduce the number of times that the MSRVs lift and reseat.

2. Insert the following statement at the location shown on the marked-up copy of the Tech Spec 3.7.4 Bases:

The ADV flow path for each steam generator may be used to reduce main steam system pressure below the set pressure of the MSRVs. This will have the effect of reducing the number of times that the MSRVs cycle open and closed during an accident that requires operation of the SSF. When the ADV flow path is used to control main steam system pressure, local main steam pressure instrumentation at the ADVs shall be available and communication with the SSF Control Room shall be established to ensure that proper pressure control is established and maintained.

3. Insert the following statement at the location shown on the marked-up copy of the Tech Spec 3.7.4 Bases:

Though the ADV flow path for each steam generator may be used if available to reduce Main Steam system pressure below the set pressure of the MSRVs during an accident that requires operation of the SSF, this capability of the ADVs to reduce MSRV cycling in an SSF event is not required for the ADVs to be OPERABLE, and ADV flow paths are not required for the SSF to be considered OPERABLE.

B 3.7 PLANT SYSTEMS

B 3.7.4 Atmospheric Dump Valve (ADV) Flow Paths

BASES

BACKGROUND

The ADV flow paths provide a method for cooling the unit to decay heat removal (DHR) entry conditions, should the preferred heat sink via the Turbine Bypass System to the condenser not be available, as discussed in the UFSAR (Ref. 2). This is done in conjunction with the secondary cooling water from the Emergency Feedwater (EFW) System.

The steam generator tube rupture (SGTR) analysis (Ref. 3) credits operator action to depressurize the steam generators by opening each of the ADV flow paths.

In addition, the ADV flow path for each steam generator is credited as a compensatory measure in Technical Specification (TS) 3.5.2, "High Pressure Injection (HPI)." In certain HPI configurations, the ADV flow path for one steam generator is credited to depressurize the steam generator and enhance primary-to-secondary heat transfer during certain small break loss of coolant accidents (LOCAs).

Insert 1 →

For each steam generator, the ADV flow path is comprised of the atmospheric dump block valve bypass (1" bypass), the atmospheric vent valve (a 12" block valve), the atmospheric dump control valve (i.e., throttle valve), and the atmospheric vent block valve (i.e., isolation valve). The throttle valve and the isolation valve are in parallel and are located downstream of the atmospheric vent valve.

The atmospheric vent valve should be opened prior to opening the throttle valve or isolation valve. This is accomplished by first opening the atmospheric dump block valve bypass.

This equalizes the differential pressure across the atmospheric vent valve. Once the atmospheric vent valve is opened, the cool down rate is controlled using the throttle valve. If additional relief capacity is needed, the isolation valve can be opened. The capacity of the throttle or isolation valve exceeds decay heat loads and is sufficient to cool down the plant.

BASES

APPLICABLE SAFETY ANALYSIS

The SGTR analysis credits operator action to depressurize the steam generators by opening both ADV flow paths (i.e., the ADV flow path for each steam generator) within 40 minutes of identifying the ruptured steam generator. Within this 40-minute time period, the operators are only required to open the bypass valve, the block valve, and the throttle valve. However, later in the event, the analysis also assumes that the operators will open the isolation valves in each ADV flow path.

Operator action to depressurize a steam generator via its ADV flow path is credited in the analysis of certain small break LOCAs with THERMAL POWER ≤ 75% RTP and the plant operated with a degraded HPI System. This event credits operator action to open one ADV flow path within 25 minutes of an Engineered Safeguards Protective System (ESPS) actuation.

If enhanced steam generator cooling is not credited in the small break LOCA analysis, two HPI trains are required to mitigate specific small break LOCAs. However, if equipment not qualified as QA-1 (i.e., an ADV flow path for a steam generator) is credited for enhanced steam generator cooling, the safety analyses have determined that the capacity of one HPI train is sufficient to mitigate a small break LOCA on the discharge of the reactor coolant pumps if THERMAL POWER is ≤ 75% RTP.

The analysis for degraded HPI credits an ADV flow path for one steam generator as a compensatory measure in the event an HPI train is inoperable and THERMAL POWER is ≤ 75% RTP. During this situation, the ADV flow path for one steam generator is credited during certain small break LOCAs to depressurize the steam generator and enhance primary-to-secondary heat transfer. This is done in conjunction with the EFW System providing cooling water to the steam generator. The ADV flow path is comprised of manual valves. Operator action is credited for establishing the ADV flow path within 25 minutes of an ESPS signal.

Additionally, the ADV flow path for each steam generator is credited as a compensatory measure in TS 3.5.2, "High Pressure Injection (HPI)." Typically, single failures are not considered once the plant has entered a condition defined in the TS. However, the Completion Time permitted when the HPI system is degraded, is an extended period of time. In the event an accident occurred during this extended Completion Time and a single failure were to occur in the degraded HPI system, the ability of a plant to mitigate the consequences of specific small break LOCAs continues to be assured by the ADV flow path for one steam generator.

Insert 2

The ADV flow paths satisfy Criterion 3 of 10 CFR 50.36 (Ref. 1).

Tech Spec 3.10.1 Bases markup in support of ADV operation during an SSF Event

a. Insert the following statement at the location shown on the marked-up copy of the Tech Spec 3.10.1 Bases:

During an accident that requires operation of the SSF, the reactor decay heat removal function is accomplished by establishing natural circulation conditions through the Steam Generators and relieving steam via the MSRVs. The ADVs may be used to lower MS system pressure below the set pressure for the MSRVs. In order to ensure that the net SSF RC makeup system flow rate provided to the Reactor Coolant System (RCS) during an SSF event is adequate to offset volume shrinkage caused by decreasing MS system pressure with the ADVs, total combined RCS leakage (as monitored during normal operation) is required to be ≤ 12.0 GPM for operation of the ADVs.

LCO (continued)

Unit 3

Number of Bank 2, Group B & C Pressurizer Heaters Available	Maximum Allowed Pressurizer Steam Space Leakage
21	0.00 GPM

An OPERABLE SSF Portable Pumping System includes an SSF submersible pump and a flow path capable of taking suction from the intake canal and discharging into the Unit 2 CCW line. An OPERABLE Reactor Coolant Makeup System includes an SSF RC Makeup pump, piping, instruments, and controls to ensure a flow path capable of taking suction from the spent fuel pool and discharging into the RCS. The following leakage limits are applicable for the SSF RC Makeup System to be considered OPERABLE:

Maximum Allowed Total Combined RCS Leakage for SSF RC Makeup System Operability

The "maximum allowed total combined RCS leakage" is 24.7 GPM. A Unit's "total combined RCS leakage" shall be ≤ 24.7 GPM for its corresponding SSF RC Makeup System to be considered OPERABLE.

Total Combined RCS leakage is based on "Total RCS Leakage Rate + Quench Tank Level Increase + Total RC Pump Seal Return Flow." Total RC Pump Seal Return Flow is determined by summing the seal return flow rate for all four RC Pumps. If the seal return flow rate for a RC Pump is not available, 3.35 GPM may be used as the seal return flow rate for the affected pump. This worst case seal leakage occurs when two seal stages are failed with the third seal stage leaking maximum outflow to the leakage system.

Insert a.

An OPERABLE SSF Power System includes the SSF DG, diesel support systems, 4160 VAC, 600 VAC, 208 VAC, 120 VAC, and 125 VDC systems. Only one 125 VDC SSF battery and its associated charger are required to be OPERABLE to support OPERABILITY of the 125 VDC system.

ATTACHMENT 3

TECHNICAL SPECIFICATIONS BASES – RETYPE

Remove pages	Insert pages
B 3.7.4-1	B 3.7.4-1
B 3.7.4-2	B 3.7.4-2
B 3.7.4-3	B 3.7.4-3
B 3.7.4-4	B 3.7.4-4
-------------	B 3.7.4-5
B 3.10.1-8	B 3.10.1-8
B 3.10.1-9	B 3.10.1-9

B 3.7 PLANT SYSTEMS

B 3.7.4 Atmospheric Dump Valve (ADV) Flow Paths

BASES

BACKGROUND

The ADV flow paths provide a method for cooling the unit to decay heat removal (DHR) entry conditions, should the preferred heat sink via the Turbine Bypass System to the condenser not be available, as discussed in the UFSAR (Ref. 2). This is done in conjunction with the secondary cooling water from the Emergency Feedwater (EFW) System.

The steam generator tube rupture (SGTR) analysis (Ref. 3) credits operator action to depressurize the steam generators by opening each of the ADV flow paths.

In addition, the ADV flow path for each steam generator is credited as a compensatory measure in Technical Specification (TS) 3.5.2, "High Pressure Injection (HPI)." In certain HPI configurations, the ADV flow path for one steam generator is credited to depressurize the steam generator and enhance primary-to-secondary heat transfer during certain small break loss of coolant accidents (LOCAs).

During an accident that requires operation of the Standby Shutdown Facility (SSF), the ADV flow path for each steam generator may be used to reduce and control Main Steam system pressure at a pressure that is below the set pressure for the Main Steam Relief Valves (MSRVs). This action is intended to reduce the number of times that the MSRVs lift and reseat.

For each steam generator, the ADV flow path is comprised of the atmospheric dump block valve bypass (1" bypass), the atmospheric vent valve (a 12" block valve), the atmospheric dump control valve (i.e., throttle valve), and the atmospheric vent block valve (i.e., isolation valve). The throttle valve and the isolation valve are in parallel and are located downstream of the atmospheric vent valve.

The atmospheric vent valve should be opened prior to opening the throttle valve or isolation valve. This is accomplished by first opening the atmospheric dump block valve bypass.

BASES

APPLICABLE SAFETY ANALYSIS (continued)	plant to mitigate the consequences of specific small break LOCAs continues to be assured by the ADV flow path for one steam generator. The ADV flow path for each steam generator may be used to reduce main steam system pressure below the set pressure of the MSRVs. This will have the effect of reducing the number of times that the MSRVs cycle open and closed during an accident that requires operation of the SSF. When the ADV flow path is used to control main steam system pressure, local main steam pressure instrumentation at the ADVs shall be available and communication with the SSF Control Room shall be established to ensure that proper pressure control is established and maintained. The ADV flow paths satisfy Criterion 3 of 10 CFR 50.36 (Ref. 1).
LCO	The ADV flow path for each steam generator is required to be OPERABLE. The failure to meet the LCO can result in the inability to depressurize the steam generators following a SGTR. The ADV flow path for each steam generator is required to be OPERABLE. Failure to meet the LCO can result in the inability to depressurize a steam generator following a small break LOCA. This function is required to support operation with a degraded HPI System when THERMAL POWER is $\leq$ 75% RTP. An ADV flow path is considered OPERABLE when it is capable of providing a controlled relief of the main steam flow, and each valve which comprises the ADV flow path is capable of opening and closing.
APPLICABILITY	The ADV flow path for each steam generator is required to be OPERABLE in MODES 1, 2, and 3, and in MODE 4, when a steam generator is being relied upon for heat removal. In MODE 4, steam generators are relied upon for heat removal whenever an RCS loop is required to be OPERABLE or operating to satisfy LCO 3.4.5, "RCS Loops - MODE 4" or available to transfer decay heat to satisfy LCO 3.4.7, "RCS Loops - MODE 5, Loops Filled." The steam generators do not contain a significant amount of energy in MODE 4 when the unit is not relying upon a steam generator for heat transfer, and MODES 5 and 6; therefore, the ADV flow paths are not required to be OPERABLE in these MODES and condition. In addition, the ADV flow path for each steam generator is required to be OPERABLE when required by Required Actions of TS 3.5.2, "High Pressure Injection (HPI)." For all other conditions, the ADV flow paths for these Units are not credited in the analyses of any accident.

BASES

APPLICABILITY (continued)

Though the ADV flow path for each steam generator may be used if available to reduce Main Steam system pressure below the set pressure of the MSRVs during an accident that requires operation of the SSF, this capability of the ADVs to reduce MSRV cycling in an SSF event is not required for the ADVs to be OPERABLE, and ADV flow paths are not required for the SSF to be considered OPERABLE.

ACTIONS

A.1 and A.2

With one or both of the ADV flow path(s) inoperable, the Unit must be placed in a condition in which the LCO does not apply. To achieve this status, the Unit must be placed in at least MODE 3 within 12 hours, and at least MODE 4 without reliance on a steam generator for heat removal within 24 hours. The 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.

SURVEILLANCE REQUIREMENTS

SR 3.7.4.1

To perform a controlled cool down of the RCS, the valves that comprise the ADV flow path for each steam generator must be able to perform the following functions:

a) the atmospheric dump block valve bypass and the atmospheric vent valve must be capable of being opened and closed; and

b) the atmospheric dump control valve and atmospheric vent block valve must be capable of being opened and throttled through their full range.

This SR ensures that the valves that comprise the ADV flow path for each steam generator are cycled through the full control range at least once per 18 months. Performance of inservice testing or use of an ADV flow path during a unit cool down satisfies this requirement. This surveillance does not require the valves to be tested at pressure. Operating experience has shown that these components usually pass the Surveillance when performed at the 18 month Frequency. Therefore, the Frequency is acceptable from a reliability standpoint.

REFERENCES

1. 10 CFR 50.36.

2. UFSAR, Section 10.3.

BASES

REFERENCES (continued)	3.	UFSAR, Section 15.9
	4.	UFSAR, Section 15.12
	5.	UFSAR, Section 15.14

BASES

LCO (continued)

Unit 3

Number of Bank 2, Group B & C Pressurizer Heaters Available	Maximum Allowed Pressurizer Steam Space Leakage
21	0.00 GPM

An OPERABLE SSF Portable Pumping System includes an SSF submersible pump and a flow path capable of taking suction from the intake canal and discharging into the Unit 2 CCW line. An OPERABLE Reactor Coolant Makeup System includes an SSF RC Makeup pump, piping, instruments, and controls to ensure a flow path capable of taking suction from the spent fuel pool and discharging into the RCS. The following leakage limits are applicable for the SSF RC Makeup System to be considered OPERABLE:

Maximum Allowed Total Combined RCS Leakage for SSF RC Makeup System Operability

The "maximum allowed total combined RCS leakage" is 24.7 GPM. A Unit's "total combined RCS leakage" shall be ≤ 24.7 GPM for its corresponding SSF RC Makeup System to be considered OPERABLE.

Total Combined RCS leakage is based on "Total RCS Leakage Rate + Quench Tank Level Increase + Total RC Pump Seal Return Flow." Total RC Pump Seal Return Flow is determined by summing the seal return flow rate for all four RC Pumps. If the seal return flow rate for a RC Pump is not available, 3.35 GPM may be used as the seal return flow rate for the affected pump. This worst case seal leakage occurs when two seal stages are failed with the third seal stage leaking maximum outflow to the leakage system.

During an accident that requires operation of the SSF, the Reactor decay heat removal function is accomplished by establishing natural circulation conditions through the steam generators and relieving steam via the main steam relief valves (MSRVs). The atmospheric dump valves (ADVs) may be used to lower main steam system pressure below the set pressure for the MSRVs. In order to ensure that the net SSF RC Makeup system flow rate provided to the RCS during an SSF event is adequate to offset volume shrinkage caused by decreasing main steam system pressure with the ADVs, total combined RCS leakage (as monitored during normal operation) is required to be ≤ 12.0 GPM for operation of the ADVs.

BASES

LCO (continued)

An OPERABLE SSF Power System includes the SSF DG, diesel support systems, 4160 VAC, 600 VAC, 208 VAC, 120 VAC, and 125 VDC systems. Only one 125 VDC SSF battery and its associated charger are required to be OPERABLE to support OPERABILITY of the 125 VDC system.

APPLICABILITY

The SSF System is required in MODES 1, 2, and 3 to provide an alternate means to achieve and maintain the unit in MODE 3 with average RCS temperature $\geq 525^{\circ}F$ (unless the initiating event causes the unit to be driven to a lower temperature) following 10 CFR 50 Appendix R fire, turbine building flood, sabotage, SBO and tornado missile events. The safety function of the SSF is to achieve and maintain the unit in MODE 3 with average RCS temperature $\geq 525^{\circ}F$ (unless the initiating event causes the unit to be driven to a lower temperature); therefore, this LCO is not applicable in MODES 4, 5, or 6.

ACTIONS

The exception for LCO 3.0.4, provided in the Note of the Actions, permits entry into MODES 1, 2, and 3 with the SSF not OPERABLE. This is acceptable because the SSF is not required to support normal operation of the facility or to mitigate a design basis accident.

A.1, B.1, C.1, D.1, and E.1

With one or more of the SSF Systems inoperable or the required SSF instrumentation of Table B 3.10.1-1 inoperable, the SSF is in a degraded condition and the system(s) or instrumentation must be restored to OPERABLE status within 7 days. The 7 day Completion Time is based on the low probability of an event occurring which would require the SSF to be utilized.

F.1

If the Required Action and associated Completion Time of Condition A, B, C, D, or E are not met when SSF Systems or Instrumentation are inoperable due to maintenance, the unit may continue to operate provided that the SSF is restored to OPERABLE status within 45 days from discovery of initial inoperability.

This Completion Time is modified by a Note that indicates that the SSF shall not be in Condition F for more than a total of 45 days in a calendar