ATTACHMENT 1

TECHNICAL SPECIFICATION

REVISED PAGES

Insert Pages	Remove Pages
3.9.3-1	3.9.3-1
B 3.9.3-2	B 3.9.3-2
B 3.9.3-3	B 3.9.3-3
B 3.9.3-4	B 3.9.3-4
B 3.9.3-3	B 3.9.3-3
B 3.9.3-5	B 3.9.3-5

3.9 REFUELING OPERATIONS

3.9.3 Containment Penetrations

LCO 3.9.3 The containment penetrations shall be in the following status:

a. The equipment hatch closed and held in place by a minimum of four bolts;

b. One door in each air lock closed; and

----------NOTE----------
An emergency air lock door is not required to be closed when a temporary cover plate is installed.
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c. Each penetration providing direct access from the containment atmosphere to the outside atmosphere either:

1. closed by a manual, non-automatic power operated or automatic isolation valve, blind flange, or equivalent, or

2. capable of being closed by an OPERABLE Reactor Building Purge supply and exhaust isolation signal.

APPLICABILITY: During CORE ALTERATIONS,
During movement of irradiated fuel assemblies within containment.

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. One or more containment penetrations not in required status.	A.1	Suspend CORE ALTERATIONS	Immediately
	AND		
	A.2	Suspend movement of irradiated fuel assemblies within containment.	Immediately

BASES

BACKGROUND (continued)

OPERABILITY is required. During periods of unit shutdown when containment OPERABILITY is not required, the door interlock mechanism may be disabled, allowing both doors of an air lock to remain open for extended periods when frequent containment ingress and egress is necessary. During CORE ALTERATIONS or movement of irradiated fuel assemblies within containment, containment closure is required; therefore, the door interlock mechanism may remain disabled, but one air lock door must always remain closed. Placement of a temporary cover plate in the emergency air lock is an acceptable means for providing containment closure.

The temporary cover plate is installed and sealed against the inner emergency air lock door flange gasket. The temporary cover plate is visually inspected to ensure that no gaps exist. All cables, hoses and service air piping run through the sleeves on the temporary cover plate will also be installed and sealed. The sleeves will also be inspected to ensure that no gaps exist. Leak testing is not required prior to beginning fuel handling operations. Therefore, visual inspection of the temporary cover plate over the emergency air lock satisfies the requirement that the air lock be closed, which constitutes operability for this requirement.

The requirements on containment penetration closure ensure that a release of fission product radioactivity within containment will be restricted from escaping to the environment. The closure restrictions are sufficient to restrict fission product radioactivity release from containment due to a fuel handling accident during refueling.

The Reactor Building Purge System includes a supply penetration and exhaust penetration. During MODES 1, 2, 3, and 4, two valves in each of the supply and exhaust penetrations are secured in the closed position. The system is not subject to a Specification in MODE 5.

In MODE 6, large air exchanges are necessary to support refueling operations. The purge system is used for this purpose, and two valves in each penetration flow path may be closed on a unit vent high radiation signal.

(continued)

BASES

BACKGROUND (continued)

Other containment penetrations that provide direct access from containment atmosphere to outside atmosphere must be isolated on at least one side. Isolation may be achieved by a closed automatic isolation valve, non-automatic power operated valve, manual isolation valve, blind flange, or equivalent. Equivalent isolation methods may include use of a material that can provide a temporary, atmospheric pressure ventilation barrier for the containment penetration(s) during fuel movements.

APPLICABLE SAFETY ANALYSES

During CORE ALTERATIONS or movement of irradiated fuel assemblies within containment, the most severe radiological consequences result from a fuel handling accident. The fuel handling accident is a postulated event that involves damage to irradiated fuel (Ref. 2). A minimum fuel transfer canal water level and the minimum decay time of 72 hours prior to CORE ALTERATIONS ensure that the release of fission product radioactivity subsequent to a fuel handling accident results in doses that are within the guideline values specified in 10 CFR 100. The design basis for fuel handling accidents has historically separated the radiological consequences from the containment capability. The NRC staff has treated the containment capability for fuel handling conditions as a logical part of the "primary success path" to mitigate fuel handling accidents, irrespective of the assumptions used to calculate the radiological consequences of such accidents (Ref. 2).

Containment penetrations satisfy Criterion 3 of 10 CFR 50.36.

LCO

This LCO reduces the consequences of a fuel handling accident in containment by limiting the potential escape paths for fission product radioactivity from containment. The LCO requires any penetration providing direct access from the containment atmosphere to the outside atmosphere to be closed except for the OPERABLE containment purge and exhaust penetrations. For the OPERABLE containment purge and exhaust penetrations, this LCO ensures that these penetrations are isolable by the RB purge isolation signal.

(continued)

BASES (continued)

LCO (continued)

This LCO is modified by a note indicating that an emergency air lock door is not required to be closed when a temporary cover plate is installed.

APPLICABILITY

The containment penetration requirements are applicable during CORE ALTERATIONS or movement of irradiated fuel assemblies within containment because this is when there is a potential for a fuel handling accident. In MODES 1, 2, 3, and 4, containment penetration requirements are addressed by LCO 3.6.1. In MODES 5 and 6, when CORE ALTERATIONS or movement of irradiated fuel assemblies within containment are not being conducted, the potential for a fuel handling accident does not exist. Therefore, under these conditions no requirements are placed on containment penetration status.

ACTIONS

A.1 and A.2

With the containment equipment hatch, air locks, or any containment penetration that provides direct access from the containment atmosphere to the outside atmosphere not in the required status, including the Containment Purge and Exhaust Isolation System not capable of automatic actuation when the purge and exhaust valves are open, the unit must be placed in a condition in which the isolation function is not needed. This is accomplished by immediately suspending CORE ALTERATIONS and movement of irradiated fuel assemblies within containment. Performance of these actions shall not preclude moving a component to a safe position.

SURVEILLANCE REQUIREMENTS

SR 3.9.3.1

This Surveillance demonstrates that each of the containment penetrations required to be in its closed position is in that position. Also the Surveillance will demonstrate that each open penetration's valve operator has motive power, which will ensure each valve is capable of being closed.

The Surveillance is performed every 7 days during the CORE ALTERATIONS or movement of irradiated fuel assemblies within

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BASES (continued)

SURVEILLANCE REQUIREMENTS (continued)

the containment. The Surveillance interval is selected to be commensurate with the normal duration of time to complete fuel handling operations.

As such, this Surveillance ensures that a postulated fuel handling accident that releases fission product radioactivity within the containment will not result in a release of fission product radioactivity to the environment.

SR 3.9.3.2

This Surveillance demonstrates that each containment purge supply and exhaust isolation valve that is not locked, sealed or otherwise secured in the isolation position actuates to its isolation position on an actual or simulated high radiation signal. The frequency requires the isolation capability of the reactor building purge valves to be verified functional once each refueling outage prior to CORE ALTERATIONS or movement of irradiated fuel assemblies within containment. This ensures that this function is verified prior to CORE ALTERATIONS or movement of irradiated fuel assemblies within containment. This Surveillance will ensure that the valves are capable of closing after a postulated fuel handling accident to limit a release of fission product radioactivity from the containment.

REFERENCES

1. UFSAR, Section 15.11.

2. NRC letter to RG & E dated December 7, 1995, R.E. Ginna Nuclear Power Plant Conversion to Improved Standard Technical Specifications - Resolutions of Ginna Design Basis for Refueling Accidents.

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ATTACHMENT 2

TECHNICAL SPECIFICATION MARKUP

3.9 REFUELING OPERATIONS

3.9.3 Containment Penetrations

LCO 3.9.3 The containment penetrations shall be in the following status:

a. The equipment hatch closed and held in place by a minimum of four bolts;

b. One door in each air lock closed; and

NOTE
An emergency air lock door is not required to be closed when a temporary cover plate is installed.

c. Each penetration providing direct access from the containment atmosphere to the outside atmosphere either:

1. closed by a manual, non-automatic power operated or automatic isolation valve, blind flange, or equivalent, or

2. capable of being closed by an OPERABLE Reactor Building Purge supply and exhaust isolation signal.

APPLICABILITY: During CORE ALTERATIONS,
During movement of irradiated fuel assemblies within containment.

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. One or more containment penetrations not in required status.	A.1	Suspend CORE ALTERATIONS	Immediately
	AND		
	A.2	Suspend movement of irradiated fuel assemblies within containment.	Immediately

BASES

BACKGROUND (continued)

OPERABILITY is required. During periods of unit shutdown when containment OPERABILITY is not required, the door interlock mechanism may be disabled, allowing both doors of an air lock to remain open for extended periods when frequent containment ingress and egress is necessary. During CORE ALTERATIONS or movement of irradiated fuel assemblies within containment, containment closure is required; therefore, the door interlock mechanism may remain disabled, ~~but one air lock door must always remain closed.~~ Insert attached page to this paragraph The requirements on containment penetration closure ensure that a release of fission product radioactivity within containment will be restricted from escaping to the environment. The closure restrictions are sufficient to restrict fission product radioactivity release from containment due to a fuel handling accident during refueling.

The Reactor Building Purge System includes a supply penetration and exhaust penetration. During MODES 1, 2, 3, and 4, two valves in each of the supply and exhaust penetrations are secured in the closed position. The system is not subject to a Specification in MODE 5.

In MODE 6, large air exchanges are necessary to support refueling operations. The purge system is used for this purpose, and two valves in each penetration flow path may be closed on a unit vent high radiation signal.

Other containment penetrations that provide direct access from containment atmosphere to outside atmosphere must be isolated on at least one side. Isolation may be achieved by a closed automatic isolation valve, non-automatic power operated valve, manual isolation valve, blind flange, or equivalent. Equivalent isolation methods may include use of a material that can provide a temporary, atmospheric pressure ventilation barrier for the containment penetration(s) during fuel movements.

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Placement of a temporary cover plate in the emergency air lock is an acceptable means for providing containment closure.

The temporary cover plate is installed and sealed against the inner emergency air lock door flange gasket. The temporary cover plate is visually inspected to ensure that no gaps exist. All cables, hoses and service air piping run through the sleeves on the temporary cover plate will also be installed and sealed. The sleeves will also be inspected to ensure that no gaps exist. Leak testing is not required prior to beginning fuel handling operations. Therefore, visual inspection of the temporary cover plate over the emergency air lock satisfies the requirement that the air lock be closed, which constitutes operability for this requirement.

Insert in Background of Bases
B 3.9.3

BASES (continued)

APPLICABLE SAFETY ANALYSES

During CORE ALTERATIONS or movement of irradiated fuel assemblies within containment, the most severe radiological consequences result from a fuel handling accident. The fuel handling accident is a postulated event that involves damage to irradiated fuel (Ref. 2). A minimum fuel transfer canal water level and the minimum decay time of 72 hours prior to CORE ALTERATIONS ensure that the release of fission product radioactivity subsequent to a fuel handling accident results in doses that are within the guideline values specified in 10 CFR 100. The design basis for fuel handling accidents has historically separated the radiological consequences from the containment capability. The NRC staff has treated the containment capability for fuel handling conditions as a logical part of the "primary success path" to mitigate fuel handling accidents, irrespective of the assumptions used to calculate the radiological consequences of such accidents (Ref. 2).

Containment penetrations satisfy Criterion 3 of 10 CFR 50.36.

LCO

This LCO reduces the consequences of a fuel handling accident in containment by limiting the potential escape paths for fission product radioactivity from containment. The LCO requires any penetration providing direct access from the containment atmosphere to the outside atmosphere to be closed except for the OPERABLE containment purge and exhaust penetrations. For the OPERABLE containment purge and exhaust penetrations, this LCO ensures that these penetrations are isolable by the RB purge isolation signal. This LCO is modified by a note indicating that an emergency air lock door is not required to be closed when a temporary cover plate is installed.

APPLICABILITY

The containment penetration requirements are applicable during CORE ALTERATIONS or movement of irradiated fuel assemblies within containment because this is when there is a potential for a fuel handling accident. In MODES 1, 2, 3, and 4, containment penetration requirements are addressed by LCO 3.6.1. In MODES 5 and 6, when CORE ALTERATIONS or movement of irradiated fuel assemblies within containment are not being conducted, the potential for a fuel handling accident does not exist. Therefore, under these conditions no requirements are placed on containment penetration status.

(continued)

ATTACHMENT 3

TECHNICAL JUSTIFICATION

Technical Justification

Background

The license amendment request became necessary due to a discovery that existing practices during refueling operations conflicted with Technical Specification requirements. Specifically, Current Technical Specification (CTS) 3.8.6 and Improved Technical Specification (ITS) 3.9.3 require one door of the personnel and emergency air locks to be closed. CTS for air lock configuration during refueling operations contained an interpretation that allowed the emergency air lock to be sealed with a temporary cover plate that contained penetrations for outage related cables and services such as steam generator eddy current testing cables. This condition was reported in LER 269/98-16.

ITS 3.9.3 Containment Penetrations LCO 3.9.3 b currently requires one door in each air lock to be closed during refueling operations. This specification will be amended to include a note that will allow the emergency air lock to be sealed with a temporary cover plate in lieu of an air lock door during refueling operations. ITS 3.9.3 bases will also be amended to include this change.

Technical Justification

A temporary cover plate that accommodates passage of cables, pneumatic tubing, etc., is normally placed in the emergency air lock during refueling operations. The cover plate satisfies the requirements of this specification, provided that it is "closed". The cover plate is considered to be closed when a visual inspection shows no obvious leakage path. In the event of a loss of decay heat removal capability, personnel are designated by procedure to disconnect the temporary hoses, tubing and cabling and close the emergency air lock outer door to restrict potential leakage.

Containment air locks, which are also part of the containment pressure boundary, provide a means for personnel access during Modes 1, 2, 3 and 4 unit operation in accordance with LCO 3.6.2 "Containment Air Locks". Each air lock has a door at both ends. The doors are normally interlocked to prevent simultaneous opening when containment operability is required. During periods of unit shutdown when containment operability

is not required, the door interlock mechanism may be disabled, allowing both doors of an air lock to remain open for extended periods when frequent containment ingress and egress is necessary.

Neither containment operability nor containment closure, are required for refueling operations to satisfy the assumptions of the dose analyses associated with a fuel handling accident. The Updated Final Safety Analysis Report, Section 15.11, Fuel Handling Accident Inside Containment, analyses takes no credit for containment or filtration of gases released. The analyses concluded that the potential dose release from containment would not exceed the 10 CFR 100 limits. The air locks serve to restrict leakage from containment in the event of a fuel handling accident. This provides an additional layer of defense in depth beyond that assumed in dose calculations.

The temporary cover plate is an 36 inch diameter, 1 inch thick aluminum plate. The temporary cover plate is installed and sealed against the inner emergency air lock door flange gasket. Positive sealing of the temporary cover plate is accomplished by the use of RTV sealants. The temporary cover plate is visually inspected to ensure that no gaps exist. All cables, hoses and service air piping run through the sleeves on the temporary cover plate will also be installed and sealed. The sleeves will also be inspected to ensure that no gaps exist. Leak testing is not required prior to beginning fuel handling operations. Therefore, visual inspection of the temporary cover plate over the emergency air lock satisfies the requirement that the air lock be "closed", which constitutes operability for this requirement.

The requirements on penetration closure ensure that a release of fission product radioactivity within containment will be restricted from escaping to the environment. The closure restrictions, including the allowance for the temporary cover plate, are sufficient to restrict fission product radioactivity release from containment due to a fuel handling accident during refueling.

The Staff has approved similar changes for other licensees. Licensees have revised technical specifications to leave air lock doors open on either, one or both air locks. Licensees new or revised fuel handling accident analysis and various administrative controls provide justification. Currently,

Duke is not able to support leaving the air lock doors open during refueling operations due to the unknown affect radioactive releases would have on control room habitability. Thus, Duke concludes that the temporary cover plate provides an acceptable alternative to having an air lock door closed. This approach is more restrictive than air lock closure requirements during refueling previously approved by the staff for other licensees.

ATTACHMENT 4

NO SIGNIFICANT HAZARDS CONSIDERATION EVALUATION

No Significant Hazards Consideration Evaluation

This proposed change has been evaluated against the standards in 10 CFR 50.92 and has been determined to involve no significant hazards, in 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?

   The proposed change allows the use of a temporary cover plate as a seal for the emergency air lock during refueling operations in lieu of an air lock door. Duke analyses for Oconee Nuclear Station (ONS) does not credit containment closure. Therefore, use of the temporary cover plate does not affect offsite doses, which were previously calculated to be well within 10 CFR 100 limits. As such, the proposed change does not involve a significant increase in the probability or consequences of an accident.

2. Create the possibility of a new or different kind of accident from any accident previously evaluated.

   The fuel handling accident inside containment analyses discussed in the Updated Final Safety Analysis Report section 15.11 bound the proposed change. No new or different type of accident will occur because of the temporary cover plate placement.

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

   Placing the temporary cover plate in the emergency air lock will still meet the intent of containment closure. The building pressure does not increase during a fuel handling accident and fission products will be contained. The fuel handling accident inside containment analyses does not credit containment closure for reducing offsite dose. As such, the proposed change does not involve a significant reduction in the margin of safety.

ATTACHMENT 5

ENVIRONMENTAL IMPACT ANALYSIS

Environmental Impact Analysis

Pursuant to 10 CFR 51.22 (b), an evaluation of the proposed amendment has been performed to determine whether or not it meets the criteria for categorical exclusion set forth in 10 CFR 51.22 (c) 9 of the regulations. The proposed amendment does not involve:

1. A significant hazards consideration.

   This is supported by the determination of no significant hazards in attachment 4.

2. There is no significant change in the types or significant increase in the amounts of any effluents that may be released offsite.

   This activity does not change the types or significantly increase the amounts of any effluents that may be released offsite. The effluents released are bounded by Updated Final Safety Analysis Report Section 15.11 Fuel Handling Accident Inside Containment.

3. There is no significant increase in individual or cumulative occupational radiation exposure.

   This activity will not significantly increase the individual or cumulative occupational radiation exposure. Radiation exposure is bounded by Updated Final Safety Analysis Report Section 15.11 Fuel Handling Accident Inside Containment.