ATTACHMENT A

Proposed Technical Specification Changes

ATTACHMENT A

Revise the Technical Specification pages as follows:

Remove	Insert
3.6-1	3.6-1
3.6-2	3.6-2
3.6-3	3.6-3
3.6-4	3.6-4
3.6-5	-----
3.6-6	-----
3.6-7	-----
3.6-7A	-----
3.6-8	-----
3.6-9	-----
3.6-10	-----
3.6-11	-----
3.8-1	3.8-1
3.8-3	3.8-3
3.8-5	3.8-5
-----	3.8-6
4.4-4	4.4-4
4.4-6	4.4-6
4.4-7	4.4-7
4.4-8	4.4-8
4.4-11	4.4-11
4.4-13	4.4-13
4.4-14	4.4-14
4.4-17	4.4-17

3.6 Containment System

Applicability:

Applies to the integrity of reactor containment.

Objective:

To define the operating status of the reactor containment for plant operation.

Specification:

3.6.1 Containment Integrity

a. Except as allowed by 3.6.3, containment integrity shall not be violated unless the reactor is in the cold shutdown condition. Closed valves may be opened on an intermittent basis under administrative control.

b. The containment integrity shall not be violated when the reactor vessel head is removed unless the boron concentration is greater than 2000 ppm.

c. Positive reactivity changes shall not be made by rod drive motion or boron dilution whenever the containment integrity is not intact unless the boron concentration is greater than 2000 ppm.

3.6.2 Internal Pressure

If the internal pressure exceeds 1 psig or the internal vacuum exceeds 2.0 psig, the condition shall be corrected within 24 hours or the reactor rendered subcritical.

3.6.3 Containment Isolation Boundaries

3.6.3.1 With a containment isolation boundary inoperable for one or more containment penetrations, either:

a. Restore each inoperable boundary to OPERABLE status within 4 hours, or

b. Isolate each affected penetration within 4 hours by use of at least one deactivated automatic valve secured in the isolation position, one closed manual valve, or a blind flange, or

c. Be in at least hot shutdown within the next 6 hours and in cold shutdown within the following 30 hours.

3.6.4 Combustible Gas Control

3.6.4.1 When the reactor is critical, at least two independent containment hydrogen monitors shall be operable. One of the monitors may be the Post Accident Sampling System.

3.6.4.2 With only one hydrogen monitor operable, restore a second monitor to operable status within 30 days or be in at least hot shutdown within the next 6 hours.

3.6.4.3 With no hydrogen monitors operable, restore at least one monitor to operable status within 72 hours or be in at least hot shutdown within the next 6 hours.

3.6.5 Containment Mini-Purge

Whenever the containment integrity is required, emphasis will be placed on limiting all purging and venting times to as low as achievable. The mini-purge isolation valves will remain closed to the maximum extent practicable but may be open for pressure control, for ALARA, for respirable air quality considerations for personnel entry, for surveillance tests that may require the valve to be open or other safety related reasons.

[illegible]

Basis:

The reactor coolant system conditions of cold shutdown assure that no steam will be formed and hence there would be no pressure buildup in the containment if the reactor coolant system ruptures.

The shutdown margins are selected based on the type of activities that are being carried out. The (2000 ppm) boron concentration provides shutdown margin which precludes criticality under any circumstances. When the reactor head is not to be removed, a cold shutdown margin of 1%Δk/k precludes criticality in any occurrence.

Regarding internal pressure limitations, the containment design pressure of 60 psig would not be exceeded if the internal pressure before a major steam break accident were as much as 1 psig.[1] The containment is designed to withstand an internal vacuum of 2.5 psig.[2] The 2.0 psig vacuum is specified as an operating limit to avoid any difficulties with motor cooling.

In order to minimize containment leakage during a design basis accident involving a significant fission product release, penetrations not required for accident mitigation are provided with isolation boundaries. These isolation boundaries consist of either passive devices or active automatic valves and are listed in a procedure under the control of Technical Specification 6.8. Closed manual valves, deactivated automatic valves secured in their closed position (including check valves with flow through the valve secured), blind flanges and closed systems are considered passive devices. Automatic isolation valves designed to close following an accident without operator action, are considered active devices. Two isolation devices are provided for each mechanical penetration, such that no single credible failure or malfunction of an active component can cause a loss of isolation, or result in a leakage rate that exceeds limits assumed in the safety analyses[3].

In the event that one isolation boundary is inoperable, the affected penetration must be isolated with at least one boundary that is not affected by a single active failure. Isolation boundaries that meet this criterion are a closed and deactivated automatic containment isolation valve, a closed manual valve, or a blind flange.

The opening of closed containment isolation valves on an intermittent basis under administrative control includes the following considerations: (1) stationing an individual qualified in accordance with station procedures, who is in constant communication with the control room, at the valve controls, (2) instructing this individual to close these valves in an accident situation, and (3) assuring that environmental conditions will not preclude access to isolate the boundary and that this action will prevent the release of radioactivity outside the containment.

<u>References:</u>

(1) Westinghouse Analysis, "Report for the BAST Concentration Reduction for R. E. Ginna", August 1985, submitted via Application for Amendment to the Operating License in a letter from R.W. Kober, RG&E to H.A. Denton, NRC, dated October 16, 1985

(2) UFSAR - Section 3.8.1.2.2

(3) UFSAR - Section 6.2.4

3.8 REFUELING

Applicability

Applies to operating limitations during refueling operations.

Objective

To ensure that no incident could occur during refueling operations that would affect public health and safety

Specification

3.8.1 During refueling operations the following conditions shall be satisfied.

a. Containment penetrations shall be in the following status:

   i. The equipment hatch shall be in place with at least one access door closed, or the closure plate that restricts air flow from containment shall be in place,

   ii. At least one access door in the personnel air lock shall be closed, and

   iii. Each penetration providing direct access from the containment atmosphere to the outside atmosphere shall be either:

      1. Closed by an isolation valve, blind flange, or manual valve, or

      2. Be capable of being closed by an OPERABLE automatic shutdown purge or mini-purge valve.

b. Radiation levels in the containment shall be monitored continuously.

c. Core subcritical neutron flux shall be continuously monitored by at least two source range neutron monitors, each with continuous visual indication in the control room and one with audible indication in the containment and control room available whenever core geometry is being changed. When core geometry is not being changed at

flange. If this condition is not met, all operations involving movement of fuel or control rods in the reactor vessel shall be suspended.

3.8.2 If any of the specified limiting conditions for refueling is not met, refueling of the reactor shall cease; work shall be initiated to correct the violated conditions so that the specified limits are met; no operations which may increase the reactivity of the core shall be made.

3.8.3 If the conditions of 3.8.1.d are not met, then in addition to the requirements of 3.8.2, isolate the shutdown purge and mini-purge penetrations within 4 hours.

Basis:

The equipment and general procedures to be utilized during refueling are discussed in the UFSAR. Detailed instructions, the above specified precautions, and the design of the fuel handling equipment incorporating built-in interlocks and safety features, provide assurance that no incident could occur during the refueling operations that would result in a hazard

provided on the lifting hoist to prevent movement of more than one fuel assembly at a time. The spent fuel transfer mechanism can accommodate only one fuel assembly at a time. In addition, interlocks on the auxiliary building crane will prevent the trolley from being moved over stored racks containing spent fuel.

The operability requirements for residual heat removal loops will ensure adequate heat removal while in the refueling mode. The requirement for 23 feet of water above the reactor vessel flange while handling fuel and fuel components in containment is consistent with the assumptions of the fuel handling accident analysis.

The analysis[3] for a fuel handling accident inside containment establishes acceptable offsite limiting doses following rupture of all rods of an assembly operated at peak power. No credit is taken for containment isolation or effluent filtration prior to release. Requiring closure of penetrations which provide direct access from containment atmosphere to the outside atmosphere establishes additional margin for the fuel handling accident and establishes a seismic envelope to protect against the potential consequences of seismic events during refueling. Isolation of these penetrations may be achieved by an OPERABLE shutdown purge or mini-purge valve, blind flange, or isolation valve. An OPERABLE shutdown purge or mini-purge valve is capable of being automatically isolated by R11 or R12. Penetrations which do not provide direct access from containment atmosphere to the outside atmosphere support containment integrity by either a closed system, necessary isolation valves, or a material which can provide a temporary ventilation barrier, at atmospheric pressure, for the containment penetrations during fuel movement.

<u>References</u>

(1) UFSAR Sections 9.1.4.4 and 9.1.4.5

(2) Reload Transient Safety Report, Cycle 14

(3) UFSAR Section 15.7.3.3

[illegible]

4.4.1.4 Acceptance Criteria

a. The leakage rate Ltm shall be <0.75 Lt at Pt. Pt is defined as the containment vessel reduced test pressure which is greater than or equal to 35 psig. Ltm is defined as the total measured containment leakage rate at pressure Pt. Lt is defined as the maximum allowable leakage rate at pressure Pt.

b. Lt shall be determined as $Lt = La\left(\frac{Pt}{Pa}\right)^{1/2}$ which equals .1528 percent weight per day at 35 psig. Pa is defined as the calculated peak containment internal pressure related to design basis accidents which is greater than or equal to 60 psig. La is defined as the maximum allowable leakage rate at Pa which equals .2 percent weight per day.

c. The leakage rate at Pa (Lam) shall be <0.75 La. Lam is defined as the total measured containment leakage rate at pressure Pa.

4.4.1.5 Test Frequency

a. A set of three integrated leak rate tests shall be performed at approximately equal intervals during each 10-year service period. The third test of each set shall be conducted in the final year of the 10-year service period or one year before or after the final year of the 10-year service period provided:

   i. the interval between any two Type A tests does not exceed four years,

   ii. following each in-service inspection, the containment airlocks, the steam generator inspection/maintenance penetration, and the equipment hatch are leak tested prior to returning the plant to operation, and

   iii. any repair, replacement, or modification of a containment barrier resulting from the inservice inspections shall be followed by the appropriate leakage test.

b. The local leakage rate shall be measured for each of the following components:

i. Containment penetrations that employ resilient seals, gaskets, or sealant compounds, piping penetrations with expansion bellows and electrical penetrations with flexible metal seal assemblies.

ii. Air lock and equipment door seals.

iii. Fuel transfer tube.

iv. Isolation valves on the testable fluid systems lines penetrating the containment.

v. Other containment components, which require leak repair in order to meet the acceptance criterion for any integrated leakage rate test.

4.4.2.2 Acceptance Criterion

Containment isolation boundaries are inoperable from a leakage standpoint when the demonstrated leakage of a single boundary or cumulative total leakage of all boundaries is greater than 0.60 La.

4.4.2.3 Corrective Action

a. If at any time it is determined that the total leakage from all penetrations and isolation boundaries exceeds 0.60 La, repairs shall be initiated immediately.

b. If repairs are not completed and conformance to the acceptance criterion of 4.4.2.2 is not demonstrated within 48 hours, the reactor shall be shutdown and depressurized until repairs are effected and the local leakage meets the acceptance criterion.

c. If it is determined that the leakage through a mini-purge supply and exhaust line is greater than 0.05 La an engineering evaluation shall be performed and plans for corrective action developed.

4.4.2.4 Test Frequency

a. Except as specified in b. and c. below, individual penetrations and containment isolation valves shall be tested during each reactor shutdown for refueling, or other convenient intervals, but in no case at intervals greater than two years.

b. The containment equipment hatch, fuel transfer tube, steam generator inspection/maintenance penetration, and shutdown purge system flanges shall be tested at each refueling shutdown or after each use, if that be sooner.

c. The containment air locks shall be tested at intervals of no more than six months by pressurizing the space between the air lock doors. In addition, following opening of the air lock door during the interval, a test shall be performed by pressurizing between the dual seals of each door opened, within 48 hours of the opening, unless the reactor was in the cold shutdown condition at the time of the opening or has been subsequently brought to the cold shutdown condition. A test shall also be performed by pressurizing between the dual seals of each door within 48 hours of leaving the cold shutdown condition, unless the doors have not been open since the last test performed either by pressurizing the space between the air lock doors or by pressurizing between the dual door seals.

the tendon containing 6 broken wires) shall be inspected. The accepted criterion then shall be no more than 4 broken wires in any of the additional 4 tendons. If this criterion is not satisfied, all of the tendons shall be inspected and if more than 5% of the total wires are broken, the reactor shall be shut down and depressurized.

4.4.4.2 Pre-Stress Confirmation Test

a. Lift-off tests shall be performed on the 14 tendons identified in 4.4.4.1a above, at the intervals specified in 4.4.4.1b. If the average stress in the 14 tendons checked is less than 144,000 psi (60% of ultimate stress), all tendons shall be checked for stress and retensioned, if necessary, to a stress of 144,000 psi.

b. Before reseating a tendon, additional stress (6%) shall be imposed to verify the ability of the tendon to sustain the added stress applied during accident conditions.

4.4.5 Containment Isolation Valves

4.4.5.1 Each containment isolation valve shall be demonstrated to be OPERABLE in accordance with the Ginna Station Pump and Valve Test program submitted in accordance with 10 CFR 50.55a.

4.4.6 Containment Isolation Response

4.4.6.1 Each containment isolation instrumentation channel shall be demonstrated OPERABLE by the performance of the CHANNEL CHECK, CHANNEL CALIBRATION, and CHANNEL FUNCTIONAL TEST operations for the MODES and at the frequencies shown in Table 4.1-1.

4.4.6.2 The response time of each containment isolation valve shall be demonstrated to be within its limit at least once per 18 months. The response time includes only the valve travel time for those valves which the safety analysis assumptions take credit for a change in valve position in response to a containment isolation signal.

The Specification also allows for possible deterioration of the leakage rate between tests, by requiring that the total measured leakage rate be only 75% of the maximum allowable leakage rate.

The duration and methods for the integrated leakage rate test established by ANSI N45.4-1972 provide a minimum level of accuracy and allow for daily cyclic variation in temperature and thermal radiation. The frequency of the integrated leakage rate test is keyed to the refueling schedule for the reactor, because these tests can best be performed during refueling shutdowns. Refueling shutdowns are scheduled at approximately one year intervals.

The specified frequency of integrated leakage rate tests is based on three major considerations. First is the low probability of leaks in the liner, because of (a) the use of weld channels to test the leaktightness of the welds during erection, (b) conformance of the complete containment to a 0.1% per day leak rate at 60 psig during preoperational testing, and (c) absence of any significant stresses in the liner during reactor operation. Second is the more frequent testing, at the full accident pressure, of those portions of the containment envelope that are most likely to develop leaks during reactor operation (penetrations and isolation valves) and the low value (0.60 La) of the total leakage that is specified as acceptable. Third is the tendon stress surveillance program, which provides assurance than an important part of the structural integrity of the containment is maintained.

The basis for specification of a total leakage of 0.60 La from penetrations and isolation boundaries is that only a portion of the allowable integrated leakage rate should be from those sources in order to provide assurance that the integrated leakage rate would remain within the specified limits during the intervals between integrated leakage rate tests. Because most leakage during an integrated leak rate test occurs though penetrations and isolation valves, and because for most penetrations and isolation valves a smaller leakage rate would result from an integrated leak test than from a local test, adequate assurance of maintaining the integrated leakage rate within the specified limits is provided. The limiting leakage rates from the Recirculation Heat Removal Systems are judgement values based primarily on assuring that the components could operate without mechanical failure for a period on the order of 200 days after a design basis accident. The test

The pre-stress confirmation test provides a direct measure of the load-carrying capability of the tendon.

If the surveillance program indicates by extensive wire breakage or tendon stress relation that the pre-stressing tendons are not behaving as expected, the situation will be evaluated immediately. The specified acceptance criteria are such as to alert attention to the situation well before the tendon load-carrying capability would deteriorate to a point that failure during a design basis accident might be possible. Thus the cause of the incipient deterioration could be evaluated and corrective action studied without need to shut down the reactor. The containment is provided with two readily removable tendons that might be useful to such a study. In addition, there are 40 tendons, each containing a removable wire which will be used to monitor for possible corrosion effects.

Operability of the containment isolation boundaries ensures that the containment atmosphere will be isolated from the outside environment in the event of a release of radioactive material to the containment atmosphere or pressurization of the containment. Performance of cycling tests and verification of isolation times associated with automatic containment isolation valves is covered by the Pump and Valve Test Program. Compliance with Appendix J to 10 CFR 50 is addressed under local leak testing requirements.

<u>References:</u>

(1) UFSAR Section 3.1.2.2.7

(2) UFSAR Section 6.2.6.1

(3) UFSAR Section 15.6.4.3

(4) UFSAR Section 6.3.3.8

(5) UFSAR Table 15.6-9

(6) FSAR Page 5.1.2-28

(7) North-American-Rockwell Report 550-x-32, Autonetics Reliability Handbook, February 1963.

(8) FSAR Page 5.1-28

ATTACHMENT B

Safety Evaluation

The primary purpose of this amendment is to remove Table 3.6-1, "Containment Isolation Valves", from the R.E. Ginna Technical Specifications. The reference to Table 3.6-1 in Technical Specification sections 3.6.3.1, 4.4.5.1, and 4.4.6.2 will be deleted. The bases for Technical Specification 3.6 will include a statement that the listing of containment isolation valves and boundaries will be maintained in a procedure under the controls of Technical Specification 6.8. In addition, the inoperability definition and action required statement for Technical Specifications 3.6.1 and 3.6.3.1 will be clarified. The Specifications and Bases for containment integrity during refueling operations (3.8.1 section a and 3.8.3) will be revised to make them more consistent with industry standards. Technical Specifications 4.4.1.5, section a (ii) and 4.4.2.4, section b, will be revised to include the modified steam generator inspection/maintenance penetration. Technical Specification 4.4.1.5, section a (ii) and the Bases for section 4.4 will also be clarified. The temporary notes associated with the shutdown purge system and mini-purge valves (Technical Specifications 3.6.5 and 4.4.2.4 section a and d) will be removed since the necessary flanges and valves have been installed. Also, the acceptance criteria for containment leakage criteria as listed in Technical Specification 4.4.1.4 and 4.4.2.2 will be clarified.

The 1988 Inservice Test (IST) Program provided a complete review of the containment isolation valves for Ginna and their testing requirements. The information obtained during this review was submitted to the NRC to define the IST requirements for the third ten-year interval at Ginna. This submittal was subsequently approved by the NRC. As a result of this submittal and approval, numerous clarifications were required of Technical Specification Table 3.6-1 and various plant documents. However, this amendment will remove Technical Specification Table 3.6-1.

Generic Letter 91-08 provides guidance on removing component lists from technical specifications, including the table of containment isolation valves, since their removal would not alter the requirements that are applied to these components. Removing Table 3.6-1 from the Technical Specifications and incorporating the required information into station procedures will maintain the listing of the containment isolation boundaries within a licensee controlled document. This listing is currently maintained in Procedure A-3.3 which is subject to the change control provisions of Technical Specification 6.8 as required by Generic Letter 91-08. A copy of Procedure A-3.3 is provided in Attachment D.

Generic Letter 91-08 also provided instructions to add a note to the containment isolation valve LCO with respect to opening locked or sealed closed containment isolation valves under administrative control. A note related to "closed valves" only was added to Technical Specification 3.6.1 since many test connections that are required to be open during power operation for testing purposes are not locked closed at Ginna Station. These valves are maintained closed by system lineup procedures and "containment isolation boundary" control tags and verified closed by operator walkdowns. This provides equivalent protection to locking devices since all plant personnel are trained with respect to the use of equipment control tags. A discussion of the necessary administrative controls required for opening these valves was also added to the bases for Technical Specification 3.6 consistent with GL 91-08.

The remaining changes with respect to the required actions of Technical Specification 3.6.3.1 allow consistency with Standard Technical Specifications. However, "isolation boundary" was used in place of "isolation valve" since not all penetrations have two containment isolation valves. For example, penetrations under the specifications for General Design Criteria 57 only require a single isolation valve; the piping provides an additional boundary. The use of "isolation boundary" is also consistent with the column headings of the current Containment Isolation Valve Table 3.6-1. Information on what qualifies as an "isolation boundary" is provided in the bases for Technical Specification 3.6. These criteria are consistent with the necessary General Design Criteria, or exemption, as appropriate. "Isolation boundary" was also used in place of "isolation valve" in Technical Specifications 4.4.2.2, 4.4.2.3, and the Bases for section 4.4.

The inoperability definition based on leakage for containment isolation boundaries was also removed from Technical Specification 3.6.3.1. This definition is found in Technical Specification 4.4.2.3 which was subsequently updated to make it more consistent with 10 CFR 50 Appendix J. This change eliminates duplication within the Technical Specifications and is consistent with Standard Technical Specifications.

The action statement associated with Technical Specification 3.8.1 section a was modified to make it more nearly consistent with Standard Technical Specifications. The most significant change was with respect to removing the requirement of having all automatic containment isolation valves operable during refueling operations. The proposed specification now only requires that all penetrations providing direct access from the containment atmosphere to the outside atmosphere be either isolated or capable of being isolated by an automatic purge valve. This change is considered acceptable since a fuel handling accident will not significantly pressurize the containment. In addition, the fuel handling accident analyzed for Ginna does not take credit for isolation of containment while remaining well within 10 CFR 100 guidelines (UFSAR Section 15.7.3.3.1.1). Therefore, the removal of this requirement does not affect the consequences of a fuel handling accident.

The changes to Technical Specification 3.8.3 now specifically identify which penetrations must be closed if there is no residual heat removal loop in service (i.e., shutdown purge and mini-purge). The remaining penetrations that provide direct access from the containment atmosphere to the outside atmosphere are already required to be isolated during refueling operations per new Technical Specification 3.8.1 section a (iii). The changes to the bases are consistent with Standard Technical Specifications. Consequently, these are not technical changes.

The changes with respect to containment leakage criteria in Technical Specification 4.4.1.4 are clarifications only. All terms contained in the definition for Lt is specified in the Technical Specifications consistent with 10 CFR 50 Appendix J.

The addition of the steam generator inspection/maintenance penetration to both the UFSAR Table and the necessary Technical Specification surveillance requirements is the result of a modification to enhance containment closure during mid-loop operation (Generic Letter 88-17). No new containment isolation valves were added as a result of this modification. The addition of this penetration to the UFSAR Table and Technical Specifications 4.4.1.5, section a (ii) and 4.4.2.4, section b, results in the new penetration to be treated consistent with respect to the Personnel and Equipment Hatches, and the fuel transfer tube (see letter from R.C. Mecredy, RG&E, to A.R. Johnson, NRC, dated March 13, 1990).

The first line of Technical Specification 4.4.1.5, section a (ii) is also modified to state "following each in-service inspection..." The hyphenation of "in-service" is to correct a typographical error only. The replacement of "one" with "each" provides greater understanding of the test frequency requirements. These changes are a minor clarification only and do not involve a technical change.

The temporary notes associated with the purge and mini-purge valves in Technical Specifications 3.6.5, 4.4.2.4 section a and d are removed since the shutdown purge flanges and mini-purge valves have been installed. This is not a technical change since the notes were only intended to be applicable until the completion of the necessary modifications.

Technical Specifications 4.4.5.1 and 4.4.6.2 were revised to remove the reference to Table 3.6-1 since this is being deleted. These specifications were also changed to make them consistent with Standard Technical Specifications.

In accordance with 10 CFR 50.91, these changes to the Technical Specifications have been evaluated to determine if the operation of the facility in accordance with the proposed amendment would:

1. involve a significant increase in the probability or consequences of an accident previously evaluated; or

2. create the possibility of a new or different kind of accident previously evaluated; or

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

These proposed changes do not increase the probability or consequences of a previously evaluated accident or create a new or different type of accident. Furthermore, there is no reduction in the margin of safety for any particular Technical Specification. The detailed changes are described in Attachment E.

Therefore, Rochester Gas and Electric submits that the issues associated with this Amendment request are outside the criteria of 10 CFR 50.91; and a no significant hazards finding is warranted.

ATTACHMENT C

Response To NRC Request For Additional Information

Letter From A.R. Johnson, NRC, to R.C. Mecredy, RG&E,
dated March 11, 1993

As a result of reviewing RG&E's Application for Amendment to Operating License DPR-18 with respect to removing the list of containment isolation valves from Technical Specifications, the NRC responded with a Request for Additional Information (see letter from A.R. Johnson, NRC, to R.C. Mecredy, RG&E, dated March 11, 1993). The issues discussed in this RAI have already been addressed within the Amendment Request; however, a specific response to each of the six comments and questions is provided below. It should be noted that the responses to the 56 part Question #6 related to UFSAR Table 6.2-15 and the associated figures have not been incorporated to date. The necessary changes will implemented during the next UFSAR update currently scheduled for December of 1993. This is acceptable since the listing of containment isolation valves will be maintained in Ginna Station Procedure A-3.3. Consequently, the update of the UFSAR is not necessary with respect to the subject Technical Specification Amendment Request. RG&E will also perform a detailed review of UFSAR Table 6.2-15 and the associated figures at that time to ensure consistency and completeness as requested in your March 11, 1993 letter. The listing of CIVs contained in A-3.3 has been reviewed to ensure that it is complete.

1. *First paragraph of your Safety Evaluation, second sentence, refers to UFSAR Table 6.2-13, should this be referring to Table 6.2-15?*

   The reference to UFSAR Table 6.2-13 was a typographical error. However, the necessary listing of containment isolation valves is now maintained in Ginna Station Procedure A-3.3. Consequently, all references to UFSAR Table 6.2-15 in previously submitted Amendment Requests have been replaced with Procedure A-3.3.

2. *According to Generic Letter 91-08, "Removal of Component Lists from Technical Specifications (TS)," under the section entitled "Guidance on the Removal of Component Lists from TS," it states in part "... A list of those components must be included in a plant procedure that is subject to the change control provisions for plant procedures in the Administrative Controls Section of the TS ... Although some components may be listed in the Updated Final Safety Analysis Report (UFSAR), the FSAR should not be the sole means to identify these components. Licensees are only required to update the FSAR annually, and they are only required to reflect changes made 6 months before the date of filing. Thus, the FSAR may be out of date by as much as 18 months ...". Your Safety Evaluation does not address what TS controlled procedure covers this list of containment isolation valves.*

   Response

   The listing of containment isolation valves is now maintained in Ginna Station Procedure A-3.3. This procedure is subject to Technical Specification 6.8 which requires review by the Ginna Station Plant Operations Review Committee (PORC) and approval by the Plant Manager for any changes. The safety evaluation contained in Attachment B has been updated to reflect this information.

3. *Proposed TS 3.6.3 "Containment Isolation Boundaries," items b and c state:*

   "b. Isolate each affected penetration within 4 hours by use of at least one deactivated automatic valve secured in the isolation position, one closed manual valve, or a blind flange, or

   c. Verify the operability of a closed system for the affected penetrations within 4 hours and either restore the inoperable boundary to OPERABLE status or isolate the penetration as provided in 3.6.3.1.b within 30 days, or"

   The basis for this change is given as "Specification now considers closed systems as an acceptable interim passive boundary and is more consistent with Standard Technical Specification." However, this does not reflect the Standard Technical Specifications (STS) requirement. STS 3.6.3.C states:

   > *"Isolate the affected penetration flow path by use of at least one closed and de-activated automatic valve, closed manual valve, or blind flange. (4-hour completion time)*
   >
   > *AND*
   >
   > *Verify the affected penetration flow path is isolated (once per 31 days)"*

   Therefore, the proposed change to TS 3.6.3.C is not acceptable.

   Response:

   RG&E has removed the previously submitted TS 3.6.3.C with respect to the interim use of a closed system as an acceptable boundary for a failed containment isolation valve. TS 3.6.3 is now consistent with Standard Technical Specifications.

4. *The term "Isolation Valve" is used in the proposed Bases Section of 4.4 (page 4.4-14), according to the SE, should have been replaced with the term "Isolation Boundary."*

   Response:

   The term "Isolation Valve" is correct for this section of the Bases since most containment leakage observed during testing at Ginna Station and throughout the nuclear industry is through isolation valves and not through passive containment barriers such as blind flanges. Consequently, the bases section was not changed.

5. *Proposed TS 3.6.1.a states, "Closed valves may be opened on an intermittent basis under administrative control." Generic Letter 91-08 and your safety evaluation refer to "Locked or Seal Closed containment isolation valves" not just "closed valves." Should proposed TS 3.6.1.a be referring to locked or seal closed CIVs?*

Response:

The "locked or sealed closed" terminology was not used in TS 3.6.1.a since several test connections that may be required to be opened during power operation for testing purposes are not locked closed at Ginna Station. These valves are administratively maintained closed during power operation per system lineup procedures and have "containment isolation boundary" control tags installed. This issue is also addressed in the November 30, 1992 submittal, Attachment D, Item #28. The safety evaluation contained in Attachment B was revised to reflect this information.

6. *Comments with regard to R.E. Ginna Updated Final Safety Analysis Report (UFSAR) Table 6.2-15 and Figures 6.2-13 through 6.2-78 are contained on the following pages.*

Identified discrepancies associated with proposed UFSAR Table 6.2-15.

	Penetration	*Valve/ Boundary*	*Discrepancy*
1.	*105*	*2829*	*Position indication in control room is marked "NA" for a manually operated valve. Should this be "No" for consistency?*

Response:

Yes. The position indication in control room column will be updated to identify "No" for this valve.

	Penetration	*Valve/ Boundary*	*Discrepancy*
2.	*105*	*859A*	*Valve does not appear on the UFSAR Figure 6.2-18, as indicated by proposed UFSAR Table 6.2-15.*
3.	*105*	*859B*	*Valve does not appear on the UFSAR Figure 6.2-18, as indicated by proposed UFSAR Table 6.2-15.*

Response:

UFSAR Figure 6.2-18 will be updated to include valves 859A and 859B. These valves are located on two branch lines between 864A and 859C.

	Penetration	Valve/ Boundary	Discrepancy
4.	105	864A	The normal operations position of the valve is listed as "C" (closed) in proposed UFSAR Table 6.2-15, however, it is indicated as "LC" (locked closed) on UFSAR Figure 6.2-18.

Response:

UFSAR Figure 6.2-18 is correct in showing that the valve is normally locked closed. Table 6.2-15 will be revised to correct this discrepancy.

	Penetration	Valve/ Boundary	Discrepancy
5.	109	859A	Valve does not appear on the UFSAR Figure 6.2-22, as indicated by proposed UFSAR Table 6.2-15.
6.	109	859B	Valve does not appear on the UFSAR Figure 6.2-22, as indicated by proposed UFSAR Table 6.2-15.

Response:

UFSAR Figure 6.2-22 will be updated to include valves 859A and 859B. These valves are located on two branch lines between 864B and 859C.

	Penetration	Valve/ Boundary	Discrepancy
7.	109	864B	The normal operations position of the valve is listed as "C" (closed) in proposed UFSAR Table 6.2-15, however, it is indicated as "LC" (locked closed) on UFSAR Figure 6.2-22.

Response:

UFSAR Figure 6.2-22 is correct in showing that the valve is normally locked closed. Table 6.2-15 will be revised to correct this discrepancy.

	Penetration	Valve/ Boundary	Discrepancy
8.	112	200A	*The valve type is listed as a "Globe" valve in proposed UFSAR Table 6.2-15, however, it is indicated as a "Gate" valve on UFSAR Figure 6.2-25. Also, proposed UFSAR Table 6.2-15 indicates that this valve trips on CIS, however, this is not noted with a "T" on UFSAR Figure 6.2-25.*
9.	112	200B	*The valve type is listed as a "Globe" valve in proposed UFSAR Table 6.2-15, however, it is indicated as a "Gate" valve on UFSAR Figure 6.2-25. Also, proposed UFSAR Table 6.2-15 indicates that this valve trips on CIS, however, this is not noted with a "T" on UFSAR Figure 6.2-25.*
10.	112	202	*The valve type is listed as a "Globe" valve in proposed UFSAR Table 6.2-15, however, it is indicated as a "Gate" valve on UFSAR Figure 6.2-25. Also, proposed UFSAR Table 6.2-15 indicates that this valve trips on CIS, however, this is not noted with a "T" on UFSAR Figure 6.2-25.*

Response:

Table 6.2-15 correctly identifies all three valves as globe valves which receive a containment isolation signal. Figure 6.2-25 will be revised to correct the discrepancies.

	Penetration	Valve/ Boundary	Discrepancy
11.	112	371	*The valve type is listed as a "Globe" valve in proposed UFSAR Table 6.2-15, however, it is indicated as a "Gate" valve on UFSAR Figure 6.2-25.*

Response:

Table 6.2-15 correctly identifies 871 as a globe valve. Figure 6.2-25 will be revised to correct this discrepancy.

	Penetration	Valve/ Boundary	Discrepancy
12.	112	820	*This valve is indicated on UFSAR Figure 6.2-25, and in the current Technical Specifications as a CIV, however, it is not indicated in proposed UFSAR Table 6.2-15.*
13.	112	204A	*This valve is indicated on UFSAR Figure 6.2-25, and in the current Technical Specifications as a CIV, however, it is not indicated in proposed UFSAR Table 6.2-15.*

Response:

Manual valves 820 and 204A are no longer identified as containment isolation valves in the Ginna Station Technical Specifications (see letter from A.R. Johnson, NRC, to R.C Mecredy, RG&E, Subject: *Issuance of Amendment No. 52 to Facility Operating License No. DPR-18*, dated April 20, 1993). The CIV designations for these valves on UFSAR Figure 6.2-25 will be removed to reflect this change.

	Penetration	Valve/ Boundary	Discrepancy
14.	123b	9725	*The normal operations position of the valve is listed as "C" (closed) in proposed UFSAR Table 6.2-15, however, it is indicated as "LC" (locked closed) on UFSAR Figure 6.2-26.*

Response:

UFSAR Figure 6.2-26 correctly shows 9725 as being normally locked closed. Table 6.2-15 will be revised to correct this discrepancy.

	Penetration	Valve/ Boundary	Discrepancy
15.	127	749A	*The maximum isolation time as listed in proposed UFSAR Table 6.2-15 is "NA", however, it is listed in the current Technical Specifications as having a maximum isolation time of 60 seconds.*
16.	128	749B	*The maximum isolation time as listed in proposed UFSAR Table 6.2-15 is "NA", however, it is listed in the current Technical Specifications as having a maximum isolation time of 60 seconds.*

Response:

The Technical Specifications contain a typographical error since these two valves do not receive nor require a containment isolation signal. Consequently, a 60 second maximum isolation time is not applicable. This issue was addressed in a letter from R.C. Mecredy, RG&E, to A.R. Johnson, NRC, Subject: *Containment Isolation Valves 745, 749A and 749B*, dated July 9, 1990.

	Penetration	*Valve/ Boundary*	*Discrepancy*
17.	*143*	*1721*	*Proposed UFSAR Table 6.2-15 indicates that this valve trips on CIS, however, this is not noted with a "T" on UFSAR Figure 6.2-45.*

Response

Table 6.2-15 correctly identifies 1721 as receiving a containment isolation signal. Figure 6.2-45 will be revised to correct this discrepancy.

	Penetration	*Valve/ Boundary*	*Discrepancy*
18.	*201a*	*NA*	*The system is listed in proposed UFSAR Table 6.2-15 as "Reactor compartment cooling unit A" and should be listed as "Reactor compartment cooling unit A supply" for consistency.*

Response:

The system identification for Penetration 201a will be revised to include the word "supply".

	Penetration	*Valve/ Boundary*	*Discrepancy*
19.	*201b*	*PI-2141*	*This instrument is still not indicated in UFSAR Figure 6.2-46 [47] as a CIB, even though you stated in your response to the September 26, 1991, RAI that this item was corrected.*
24.	*209a*	*PI-2140*	*This instrument is indicated on UFSAR Figure 6.2-46 [47] as a CIB, however, it is not indicated in proposed UFSAR Table 6.2-15.*

[illegible]

Response:

The CIB designation was added to the wrong pressure indicator on Figure 6.2-47. Consequently, a CIB designation will be added to PI-2141 and removed from PI-2140. Pressure indicator PI-2140 is not a containment isolation valve since it located upstream of valve 4635 (i.e., not between 4635 and containment).

	Penetration	*Valve/ Boundary*	*Discrepancy*
20.	*206b*	*5733*	*This valve is indicated in UFSAR Figure 6.2-54, and in the current Technical Specifications as a CIV, however, it is not indicated in proposed UFSAR Table 6.2-15.*
21.	*207b*	*5734*	*This valve is indicated in UFSAR Figure 6.2-56, and in the current Technical Specifications as a CIV, however, it is not indicated in proposed UFSAR Table 6.2-15.*
38.	*321*	*5701*	*This valve is indicated on UFSAR Figure 6.2-71, and in the current Technical Specifications as a CIV, however, it is not indicated in proposed UFSAR Table 6.2-15.*
39.	*322*	*5702*	*This valve is indicated on UFSAR Figure 6.2-72, and in the current Technical Specifications as a CIV, however, it is not indicated in proposed UFSAR Table 6.2-15.*

Response:

Manual valves 5733, 5734, 5701 and 5702 are no longer identified as containment isolation valves in the Ginna Station Technical Specifications (see letter from A.R. Johnson, NRC, to R.C Mecredy, RG&E, Subject: *Issuance of Amendment No. 52 to Facility Operating License No. DPR-18*, dated April 20, 1993). The CIV designations for these valves on UFSAR Figures 6.2-54, 6.2-56, 6.2-71 and 6.2-72 will be removed to reflect this change.

	Penetration	*Valve/ Boundary*	*Discrepancy*
22.	*207b*	*5736*	*The valve type is listed as a "Globe" valve in proposed UFSAR Table 6.2-15, however, it is indicated as a "Gate" valve in UFSAR Figure 6.2-56.*

Response:

Figure 6.2-56 is correct in showing that 5736 is a gate valve. Table 6.2-15 will be revised to correct this discrepancy.

	Penetration	*Valve/ Boundary*	*Discrepancy*
23.	*209a*	*NA*	*The system is listed as "Reactor compartment cooling unit B return" and according to UFSAR Figure 6.2-47 it should be listed as "Reactor compartment cooling unit B supply".*

Response:

The system identification for Penetration 209a will be revised to replace "return" with "supply".

	Penetration	*Valve/ Boundary*	*Discrepancy*
25.	*209b*	*NA*	*The system is listed as "Reactor compartment cooling unit A supply" and according to UFSAR Figure 6.2-46 it should be listed as "Reactor compartment cooling unit B return".*

Response:

The system identification for Penetration 209b will be revised to replace "A supply" with "A return" (not "B return" as suggested).

	Penetration	*Valve/ Boundary*	*Discrepancy*
26.	*210*	*10214S*	*Note 15 is listed in the proposed UFSAR Table 6.2-15 as applicable. However, note 17 appears to be more appropriate. In addition, note 17 would make it consistent with valve 10215S.*

Response:

Table 6.2-15 will be revised to correct the typographical error and replace note 15 with note 17.

	Penetration	Valve/ Boundary	Discrepancy
27.	*300*	*5879*	*This valve is listed in proposed UFSAR Table 6.2-15, and in the current Technical Specifications a as CIV, however, it is not indicated as a CIV on UFSAR Figure 6.2-58.*

Response:

AOV 5879 is not a containment isolation valve. It is only used below cold shutdown conditions to provide containment integrity when the blind flange is removed. See UFSAR Table 6.2-15, Note 29 and Technical Specification Table 3.6-1, Note 22.

	Penetration	Valve/ Boundary	Discrepancy
28.	*305a*	*1556*	*The maximum isolation time as listed in proposed UFSAR Table 6.2-15 is "NA", however, it is listed in the current Technical Specifications as having a maximum isolation time of 60 seconds.*

Response:

The Technical Specifications contain a typographical error since manual valve 1556 does not receive nor require a containment isolation signal. Consequently, a 60 second maximum isolation time is not applicable. This is a normally locked closed valve.

	Penetration	Valve/ Boundary	Discrepancy
29.	*307*	*9227*	*The maximum isolation time as listed in proposed UFSAR Table 6.2-15 is 60 seconds, however, the current Technical Specifications has the maximum isolation time listed as "note 18".*

Response:

A containment isolation signal was installed to AOV 9227 in 1981 under Engineering Work Request No. 1833. Subsequent to this modification, the NRC accepted that no containment isolation signal was required for this valve (see letter from D.M. Crutchfield, NRC, to J.E. Maier, RG&E, Subject: *Containment Isolation*, dated May 22, 1982). RG&E has not removed the subject isolation signal. Since AOV 9227 is a containment isolation valve, a 60 second maximum isolation time was added in order to be consistent with other automatic containment isolation valves.

	Penetration	Valve/ Boundary	Discrepancy
30.	308	TIA-2010	*This instrument is still not indicated in UFSAR Figure 6.2-65 as a CIB, even though you stated in your response to the September 26, 1991 RAI that this item was corrected.*
32.	311	TIA-2011	*This instrument is still not indicated in UFSAR Figure 6.2-65 as a CIB, even though you stated in your response to the September 26, 1991 RAI that this item was corrected.*
34.	315	TIA-2012	*This instrument is still not indicated in UFSAR Figure 6.2-65 as a CIB, even though you stated in your response to the September 26, 1991 RAI that this item was corrected.*
40.	323	TIA-2013	*This instrument is still not indicated in UFSAR Figure 6.2-65 as a CIB, even though you stated in your response to the September 26, 1991 RAI that this item was corrected.*

Response:

The necessary CIB designations will be added to UFSAR Figure 6.2-65 for TIA-2010, TIA-2011, TIA-2012, and TIA-2013.

	Penetration	Valve/ Boundary	Discrepancy
31.	308	NA	*This penetration was indicated as penetration 319 on the current Technical Specifications.*
36.	319	NA	*This penetration was indicated as penetration 308 on the current Technical Specifications.*

Response:

The valves for penetrations 308 and 319 are reversed in Technical Specification Table 3.6-1.

	Penetration	Valve/ Boundary	Discrepancy
33.	313	Blind Flange	The Blind Flange is indicated in UFSAR Figure 6.2-69 as "CIV", should this be "CIB"?

Response:

Figure 6.2-69 will be revised to replace the CIV designation with CIB.

	Penetration	Valve/ Boundary	Discrepancy
35.	317	Blind Flange	The Blind Flange is indicated in UFSAR Figure 6.2-70 as "CIV", should this be "CIB"?

Response:

Figure 6.2-70 will be revised to replace the CIV designation with CIB.

	Penetration	Valve/ Boundary	Discrepancy
37.	320	4641	This valve was indicated as 4647 in the current Technical Specifications.

Response:

Valve 4647 is a typographical error in the Technical Specifications. This drain valve is in series with valve 12500H which is identified on UFSAR Table 6.2-15 as a CIV. The second containment boundary is a CLIC for this penetration.

	Penetration	Valve/ Boundary	Discrepancy
41.	332a	922	The valve type is listed as a "Gate" valve in proposed UFSAR Table 6.2-15, however, it is indicated as a "Globe" valve in UFSAR Figure 6.2-74. Also proposed UFSAR Table 6.2-15 indicates that this valve's normal operating position is "C" (closed), however, it is indicated as open in UFSAR Figure 6.2-74. In addition, the maximum isolation time as listed in proposed UFSAR Table 6.2-15 is 3 seconds, however, the current Technical Specifications has the maximum isolation time listed as "NA".

42.	332a	924	*The valve type is listed as a "Gate" valve in proposed UFSAR Table 6.2-15, however, it is indicated as a "Globe" valve in UFSAR Figure 6.2-74. Also proposed UFSAR Table 6.2-15 indicates that this valve's normal operating position is "C" (closed), however, it is indicated as open in UFSAR Figure 6.2-74. In addition, the maximum isolation time as listed in proposed UFSAR Table 6.2-15 is 3 seconds, however, the current Technical Specifications has the maximum isolation time listed as "NA".*
43.	332b	923	*The valve type is listed as a "Gate" valve in proposed UFSAR Table 6.2-15, however, it is indicated as a "Globe" valve in UFSAR Figure 6.2-74. Also proposed UFSAR Table 6.2-15 indicates that this valve's normal operating position is "C" (closed), however, it is indicated as open in UFSAR Figure 6.2-74. In addition, the maximum isolation time as listed in proposed UFSAR Table 6.2-15 is 3 seconds, however, the current Technical Specifications has the maximum isolation time listed as "NA".*
44.	332d	921	*The valve type is listed as a "Gate" valve in proposed UFSAR Table 6.2-15, however, it is indicated as a "Globe" valve in UFSAR Figure 6.2-74. Also proposed UFSAR Table 6.2-15 indicates that this valve's normal operating position is "C" (closed), however, it is indicated as open in UFSAR Figure 6.2-74. In addition, the maximum isolation time as listed in proposed UFSAR Table 6.2-15 is 3 seconds, however, the current Technical Specifications has the maximum isolation time listed as "NA".*

Response:

Table 6.2-15 is correct in identifying 921, 922, 923, and 924 as gate valves and in showing that these valves are normally closed. Figure 6.2-74 will be revised to correct these discrepancies. The three second isolation time for these solenoid valves is consistent with Standard Review Plan 6.2.4.II.6.n since these valves are open to containment atmosphere and receive a CIS.

	Penetration	*Valve/ Boundary*	*Discrepancy*
45.	*401*	*3521*	*The valve type is listed as a "Gate" valve in proposed UFSAR Table 6.2-15, however, it is indicated as a "Globe" valve in UFSAR Figure 6.2-76.*

Response:

Figure 6.2-76 is correct in showing 3521 as a globe valve. Table 6.2-15 will be revised to correct this discrepancy.

	Penetration	*Valve/ Boundary*	*Discrepancy*
46.	*401*	*PT-469A*	*Instrument is indicated as Inside Containment in proposed UFSAR Table 6.2-15, however, it is indicated as outside containment in UFSAR Figure 6.2-76.*

Response:

Figure 6.2-76 is correct in showing PT-469A is located outside containment. Table 6.2-15 will be revised to correct this discrepancy.

	Penetration	*Valve/ Boundary*	*Discrepancy*
47.	*402*	*3520*	*The valve type is listed as a "Gate" valve in proposed UFSAR Table 6.2-15, however, it is indicated as a "Globe" valve in UFSAR Figure 6.2-76.*

Response:

Table 6.2-15 is correct in identifying 3520 as a gate valve. Figure 6.2-76 will be revised to correct this discrepancy.

	Penetration	Valve/ Boundary	Discrepancy
48.	*403*	*3995X*	*The valve type is listed as a "Globe" valve in proposed UFSAR Table 6.2-15, however, it is indicated as a "Gate" valve in UFSAR Figure 6.2-78.*

Response:

Figure 6.2-78 is correct in showing 3995X as a gate valve. Table 6.2-15 will be revised to correct this discrepancy.

	Penetration	Valve/ Boundary	Discrepancy
49.	*403*	*4011A*	*The valve type is listed as a "Globe" valve in proposed UFSAR Table 6.2-15, however, it is indicated as a "Gate" valve in UFSAR Figure 6.2-78.*

Response:

Table 6.2-15 is correct in identifying that 4011A is a globe valve. Figure 6.2-78 will be revised to correct this discrepancy.

	Penetration	Valve/ Boundary	Discrepancy
50.	*404*	*3994E*	*The valve type is listed as a "Globe" valve in proposed UFSAR Table 6.2-15, however, it is indicated as a "Gate" valve in UFSAR Figure 6.2-78.*

Response:

Figure 6.2-78 is correct in showing 3994E as a gate valve. Table 6.2-15 will be revised to correct this discrepancy.

	Penetration	Valve/ Boundary	Discrepancy
51.	*404*	*4012A*	*The valve type is listed as a "Globe" valve in proposed UFSAR Table 6.2-15, however, it is indicated as a "Gate" valve in UFSAR Figure 6.2-78.*

Response:

Table 6.2-15 is correct in identifying that 4012A is a globe valve. Figure 6.2-78 will be revised to correct this discrepancy.

	Location	*Discrepancy*
52.	*Note 17*	*If this note describes valves that are not CIVs, then to avoid confusion, the note should state that these valves are not CIVs.*

Response:

Table 6.2-15 note 17 will be revised to specifically state that the subject valves are not CIVs.

	Location	*Discrepancy*
53.	*Figure 6.2-13*	*There is no indication on the figure of where the "CIB" is for either penetration 2 or 29.*

Response:

Figure 6.2-13 will be replaced with two separate figures for Penetration 2 and 29. These new figures will identify the location of the CIBs as necessary.

	Location	*Discrepancy*
54.	*Figure 6.2-65*	*The "CIB" Cap downstream of 12500H/12500K doesn't show up on the proposed UFSAR Table 6.2-15 for either penetration 320 or 312. The figure does not indicate the association between penetrations and fan coolers.*

Response:

The CIB designation is incorrect on Figure 6.2-65 since the CLIC and valves 12500H and 12500K provide the necessary two containment boundaries. The figure will be revised to delete the CIB designation and provide a relationship between the fan coolers and associated penetrations.

	Location	*Discrepancy*
55.	*Figure 6.2-76*	*"CIV" appears on the figure (above CIV 11031 and to the left of valve 3409A) but does not appear to be associated with any particular valve.*

Response:

Figure 6.2-76 will be updated to remove the subject CIV designation.

[illegible]

Location	Discrepancy
56.	*There is a lack of consistency for UFSAR Figures 6.2-13 through 6.2-78 with respect to the symbols used to represent the direction of flow through the check valves, and the symbols used to represent air operated valves. In addition, not all figures indicate "CLIC" or "Closed System" where it is applicable.*

Response:

All figures will be reviewed to ensure consistency with respect to air-operated valve designations, check valve flow directions, and the use of closed system indications.

ATTACHMENT D

Ginna Station Procedure A-3.3

ROCHESTER GAS AND ELECTRIC CORPORATION

GINNA STATION

CONTROLLED COPY NUMBER 4

PROCEDURE NO. A-3.3 REV. NO. 1

CONTAINMENT INTEGRITY PROGRAM

TECHNICAL REVIEW

PORC REVIEW DATE 7-12-93

[signature]

PLANT SUPERINTENDENT

7-12-93

EFFECTIVE DATE

FOR INFORMATION ONLY

CATEGORY 1.0

REVIEWED BY: ______________________

THIS PROCEDURE CONTAINS 19 PAGES

A-3.3

CONTAINMENT INTEGRITY PROGRAM

1.0 **PURPOSE:**

1.1 To delineate the containment integrity program as required by Technical Specifications 3.6 and 3.8, and Generic Letter 88-17 for conditions above cold shutdown, refueling operations, and reduced inventory conditions, respectively.

2.0 **REFERENCES:**

2.1 Technical Specifications 3.6 and 3.8.

2.2 Generic Letter 88-17, Loss of Decay Heat Removal.

2.3 Updated Final Safety Analysis Report, Section 6.2.4.

2.4 Design Analysis DA-NS-93-002-21, EWR No. 10084, Containment Isolation System Review.

2.5 Letter from R.C. Mecredy, RG&E to A.R. Johnson, NRC - Subject: AOV-745, MOV-749A and MOV-749B, dated 7/9/90.

2.6 Inter-Office Correspondence, John Cook and Mark Flaherty to PORC, Subject: Containment Integrity During Refueling, dated 2/20/92.

2.7 O-1.1B - Establishing Containment Integrity.

2.8 O-2.3.1A - Containment Closure Capability in 2 Hours During RCS Reduced Inventory Operation.

2.9 PTT-23 Series.

2.10 S-30.7, Containment Isolation Valve Verification.

2.11 PT-39, Primary System Leakage Evaluation Inservice Inspection.

2.12 O-15.2, Required Valve Lineup for Reactor Head Removal.

2.13 O-15.7, Fuel Handling Instruction Pre-Loading and Periodic Valve Alignment Check.

3.0 **INSTRUCTIONS:**

3.1 The containment integrity program is designed to provide assurance that the necessary containment isolation boundaries are available for all required plant conditions. This program is organized to address three plant conditions:

a. Containment Integrity during Refueling.

b. Containment Integrity during Reduced RCS Inventory.

c. Containment Integrity above Cold Shutdown.

The requirements for each of these conditions is discussed below.

3.2 Containment Integrity during Refueling.

3.2.1 During plant conditions requiring containment integrity for refueling, each penetration must have a single barrier to the release of radioactive material. This single barrier may consist of any one of the following alternatives:

a. A closed system inside or outside containment such that a "direct access" release path to the outside of containment atmosphere is not provided.

b. A closed isolation valve (including check valve with flow secured), blind flange or manual valve.

c. An automatic isolation valve that closes on a Containment Ventilation Isolation (CVI) signal from high containment radioactivity.

3.2.2 In addition to the requirements above, Technical Specification 3.8 requires that "... all automatic containment isolation valves shall be operable or at least one valve in each line shall be locked closed." Since the normal containment isolation signal is not available during the refueling mode of operation, for those penetrations with automatic isolation valves, those valves must be capable of being closed remotely. If those valves are not capable of being closed remotely (i.e. inoperable) then the affected penetration must be isolated by a locked closed manual valve or blind flange. If a manual valve or blind flange is not available, then a held closed auto valve (per A-1401) with motive power removed provides equivalent isolation.

3.2.3 It is not intended that the barriers provided for containment isolation during refueling be restricted to barriers tested to the requirements of Appendix J to 10CFR50. The basis for refueling integrity is to prevent the release of radioactivity resulting from a fuel handling event during refueling operations. Since there is no potential for containment pressurization, any device which provides an atmospheric pressure boundary is sufficient.

3.2.4 Containment integrity for refueling is verified through performance of O-15.2 and O-15.7.

3.3 Containment Integrity During Reduced RCS Inventory.

3.3.1 Containment integrity during reduced inventory conditions is provided by maintaining available one barrier for each penetration. Since there is a potential for containment pressurization during loss of core cooling, this barrier should be one of the two barriers used for normal containment isolation with RCS greater than 200°F. All penetrations are required to be capable of being closed within 2 hours following a loss of RHR. This 2 hour time frame can be extended if the time to reach saturation and core uncovery is increased due to low decay heat levels.

3.3.2 Containment integrity during reduced RCS inventory is verified through performance of O-2.3.1A.

3.4 Containment Integrity above Cold Shutdown including normal power operation.

3.4.1 Reference 2.4 provides the design basis for the containment isolation configuration and testing. Any change to this procedure, including Attachment A, must be reviewed by Nuclear Safety and Licensing.

3.4.2 Attachment A provides a listing for each penetration of the valves and other boundaries required for containment integrity above cold shutdown. These boundaries are leak tested per Appendix J to 10CFR50 except where specific exemptions have been approved. This table is organized as follows:

3.4.2.1 System - description of the system which penetrates containment.

3.4.2.2 Penetration No. - unique identification number for the penetration.

3.4.2.3 Valve/Boundary - containment isolation valves or boundaries for the penetration.

3.4.2.4 Isolation Position - A two character designation used to define the two barriers which are available for each penetration. This is used since many process lines have multiple branch lines prior to entering or exiting containment. The first character defines the branch line which the containment isolation valve or boundary isolates. The second character defines the isolation barrier which the valve provides (i.e., first or second). As an example, Penetration 107 lists the following containment boundaries:

1723	a1
1728	a2

AOV 1723 is one containment barrier while AOV 1728 is a second barrier.

Above cold shutdown, both valves must be operable and capable of being closed. If AOV 1723 were inoperable, then AOV 1728 is the preferred valve to be closed in accordance with Technical Specification 3.6.3. Conversely, AOV 1723 is the preferred valve to be closed if AOV 1728 were inoperable.

As an example of penetrations with multiple branch lines, Penetration 124b lists the following containment boundaries:

1572	a1
1573	a2
1574	a2

Above cold shutdown, all three valves must be operable and capable of being closed. If manual valve 1572 were inoperable, then BOTH manual valves 1573 and 1574 must be closed in accordance with Technical Specification 3.6.3. However, if 1573 were inoperable, only 1572 must be closed (valve 1574 is not affected).

3.4.2.5 Valve Type - type of containment isolation valve (e.g., MOV).

3.4.2.6 Notes - Specific notes related to the containment isolation valve or boundary.

3.4.2.7 Maximum Isolation Time - Maximum allowed closure time in seconds for those valves which receive a containment isolation signal.

3.4.3 Prior to heatup above cold shutdown, containment integrity is verified through performance of procedure O-1.1B, PTT-23A, PT-39 and S-30.7. Closed systems inside and outside containment are verified through the required system lineups.

3.5 Closed Systems:

3.5.1 Closed systems inside and outside containment are used for several penetrations as a containment isolation barrier. The integrity of these closed systems as a barrier is typically confirmed by normal system operation or periodic test. Since these closed systems are exempt from testing per Appendix J to 10CFR50, except as noted below, the allowable leakage (e.g. packing leaks and heat exchanger tube leaks) has been based upon the guidance of ASME/ANSI OMa-1988, OM-10 for the size of isolation valve associated with the closed system. This guidance allows a leakage rate of .5 gpm per inch of nominal valve diameter.

3.5.1.1 Service Water System (Penetrations 201a, 201b, 209a, 209b, 308, 311, 312, 315, 316, 319, 320 and 323) - All piping inside containment for these penetrations up to and including the first available isolation valve on all branch lines provide one containment barrier. The integrity of this piping is verified by normal Service Water system operation and containment leakage detection systems.

Allowable leakage for the service water systems in containment are as follows:

Pen	System	Leak Rate
201a/209b	SW to/from Rx Compartment Cooler A	1.25 gpm
209a/201b	SW to/from Rx Compartment Cooler B	1.25 gpm
319/308	SW to/from Fan Cooler A	4.0 gpm
316/311	SW to/from Fan Cooler B	4.0 gpm
320/315	SW to/from Fan Cooler C	4.0 gpm
312/323	SW to/from Fan Cooler D	4.0 gpm

3.5.1.2 Component Cooling Water System (Penetrations 124a, 124c, 125, 126, 127, 128, 130, and 131) - All piping inside containment for these penetrations up to and including the first available isolation valve on all branch lines provide one containment barrier. The integrity of this piping is verified by normal Component Cooling Water system operation and containment leakage detection systems. The only exception is for penetrations 124a and 124c (Excess Letdown Heat Exchanger cooling) which are normally isolated.

Allowable leakage for the component cooling water systems inside containment are as follows:

Pen	System	Leak Rate
124a/c	CCW to/from Excess Ltd Hx	1.0 gpm
127/126	CCW to/from RCP A	2.0 gpm
128/125	CCW to/from RCP B	2.0 gpm
131/130	CCW to/from Rx Supt Cooling	3.0 gpm

3.5.1.3 Steam Generator (Penetrations 119, 123b, 206b, 207b, 321, 322, 401, 402, 403, and 404) - The steam generator tubes, shell and all connected piping inside containment for these penetrations up to and including the first available isolation valve on all branch lines provide one containment barrier. The integrity of this piping is verified by normal power operation and containment leakage detection systems.

Primary to secondary steam generator tube leakage is limited per Technical Specification 3.1.5.2 to 0.1 gpm. The allowable leakage for the lines associated with the steam generator closed system are based on the nominal isolation valve size for that line. For main steam and main feedwater lines allowable leakage will be limited to that allowed for the Auxiliary and Standby Feedwater systems.

Pen	System	Leak Rate
119	SAFW to SG A	1.5 gpm
123b	SAFW to SG B	1.5 gpm
401	MS from SG A	1.5 gpm
402	MS from SG B	1.5 gpm
403	MFW to SG A	1.5 gpm
404	MFW to SG B	1.5 gpm
206b	SG A Sample	.375 gpm
207b	SG B Sample	.375 gpm
321	SG A Blowdown	1.0 gpm
322	SG B Blowdown	1.0 gpm

3.5.1.4 Charging System (Penetrations 100, 102, 106, and 110a) - All piping outside containment from the penetration up to the discharge of the three positive displacement pumps, including the first available isolation valve on all branch lines, provide one containment barrier. The integrity of this piping is verified by normal Charging system operation and operator rounds.

The allowable leakage for the lines associated with charging system outside containment is 1.0 gpm.

Pen	System	Leak Rate
100	Charging to RCS Loop B	1.0 gpm
102	Alt Charging to Loop A	1.0 gpm
106	RCP A Seal Wtr Inlet	1.0 gpm
110a	RCP B Seal Wtr Inlet	1.0 gpm

3.5.1.5 Safety Injection (Penetrations 101 and 113) - All piping outside containment from check valves 889A/B and 870A/B to the discharge of each Safety Injection pump, including the first available isolation valve on all branch lines, provide one containment barrier. The integrity of this piping is verified by system lineups and by the monthly and quarterly pump tests.

The allowable leakage for the safety injection system is specified in PT-39.

3.5.1.6 Containment Spray (Penetrations 105 and 109) - All piping outside containment from check valves 862A/B to MOVs 860A/B/C/D, including the first available isolation valve on all branch lines, provide one containment barrier. The integrity of this piping is verified by system lineup and by the monthly and quarterly pump tests.

The allowable leakage for the containment spray system is specified in PT-39.

3.5.1.7 Residual Heat Removal (Penetrations 111, 140, 141, and 142) - All piping outside containment including the first available isolation valve on all branch lines provide one containment barrier. The integrity of this piping is verified by monthly and quarterly pump tests and by normal system operation during shutdown.

The allowable leakage for the residual heat removal system is specified in PT-39.

3.5.1.8 Hydrogen Monitoring System (Penetrations 332a, 332b, and 332d) - All piping outside containment including the first available isolation valve on all branch lines provide one containment barrier. The integrity of this piping is verified by annual 10CFR50 Appendix J testing.

3.5.1.9 Charging System - Seal Water Return (penetration 108) - All piping outside containment from MOV-313 to the VCT, including the first available isolation valve on all branch lines, provides one barrier. The integrity of this piping is verified by normal system operation and operator rounds.

The allowable leakage for the seal water return lines outside containment is 1.5 gpm.

4.0 **RECORDS:**

4.1 None.

System	Penetration No.	Valve/ Boundary	Isolation Position	Valve Type	Notes	Maximum Isolation Time (secs.)
Steam Generator Inspection/ Maintenance	2	NA	a1	Blind Flange	1	---
		NA	a2	Blind Flange	1	---
Fuel Transfer Tube	29	SAC05	a1,a2	Blind Flange	3	---
		8152	a2	Manual	6	---
		8153	a2	Manual	6	---
Charging Line to Loop B	100	370B	a1	Check	---	---
		CLOC	a2	NA	4	---
Safety Injection Pump B Discharge	101	870B	a1	Check	---	---
		889B	a1	Check	---	---
		CLOC	a2	NA	5	---
		12407	b1	Manual	6	---
		PI-923A	b1	NA	7	---
		PT-923	b1	NA	8	---
		885B	b2	Manual	---	---
Alternate Charging to Cold Leg A	102	383B	a1	Check	---	---
		CLOC	a2	NA	4	---
Construction Fire Service Water	103	NA	a1	Welded Cap	---	---
		5129	a2	Manual	9	---
Containment Spray Pump A	105	862A	a1	Check	---	---
		CLOC	a2	NA	10	---
		2829	NA	Manual	2	---
		869A	b1	Manual	6, 13	---
		2856	b2	Manual	6, 13	---
		2825	c1	Manual	---	---
		2825A	c2	Manual	6	---
		864A	d1	Manual	---	---
		859A	d2	Manual	12	---
		859B	d2	Manual	12	---
		859C	d2	Manual	12	---
Reactor Coolant Pump A Seal Water Inlet	106	304A	a1	Check	---	---
		CLOC	a2	NA	4	---
Sump A Discharge to Waste Holdup Tank	107	1723	a1	AOV	---	60
		1728	a2	AOV	---	60
Reactor Coolant Pump Seal Water Return Line and Excess Letdown to VCT	108	313	a1	MOV	---	60
		CLOC	a2	NA	14	---

System	Penetration No.	Valve/ Boundary	Isolation Position	Valve Type	Notes	Maximum Isolation Time (secs.)
Containment Spray Pump B	109	862B	a1	Check	---	---
		CLOC	a2	NA	10	---
		2830	NA	Manual	2	---
		869B	b1	Manual	6, 13	---
		2858	b2	Manual	6, 13	---
		2826	c1	Manual	---	---
		2826A	c2	Manual	6	---
		864B	d1	Manual	---	---
		859A	d2	Manual	12	---
		859B	d2	Manual	12	---
		859C	d2	Manual	12	---
Reactor Coolant Pump B Seal Water Inlet	110a	304B	a1	Check	---	---
		CLOC	a2	NA	4	---
Safety Injection Test Line	110b	879	a1,a2	Manual	15	---
Residual Heat Removal to Cold Leg B	111	720	a1	MOV	17	---
		2840	a1	Manual	6	---
		2847	a1	Manual	6	---
		2848	a1	Manual	6	---
		2853	a1	Manual	6	---
		959	a2	AOV	35	---
		CLOC	a2	NA	16	---
		371	a2	AOV	36	60
Letdown to Nonregenerative Heat Exchanger	112	200A	a1	AOV	---	60
		200B	a1	AOV	---	60
		202	a1	AOV	---	60
		203	a1	Relief	---	---
		CLOC	a1	NA	16	---
		371	a2	AOV	36	60
		427	NA	AOV	11	---
Safety Injection Pump A Discharge	113	870A	a1	Check	---	---
		889A	a1	Check	---	---
		CLOC	a2	NA	5	---
		12406	b1	Manual	6	---
		PI-922A	b1	NA	7	---
		PT-922	b1	NA	8	---
		Cap(PT-922)	b1	NA	---	---
		885A	b2	Manual	---	---
Standby Auxiliary Feedwater Line to Steam Generator A	119	9704A	a1	MOV	---	---
		9723	a1	Manual	---	---
		CLIC	a2	NA	18	---
Nitrogen to Accumulators	120a	846	a1	AOV	---	60
		8623	a2	Check	---	---
Pressurizer Relief Tank to Gas Analyzer	120b	539	a1	AOV	---	60
		546	a2	Manual	---	---

System	Penetration No.	Valve/ Boundary	Isolation Position	Valve Type	Notes	Maximum Isolation Time (secs.)
Makeup water to Pressurizer Relief Tank	121a	508	a1	AOV	---	60
		529	a2	Check	---	---
Nitrogen to Pressurizer Relief Tank	121b	528	a1	Check	---	---
		547	a2	Manual	---	---
Containment Pressure Transmitter PT945 and PT946	121c	PT945	a1	NA	8	---
		1819A	a2	Manual	---	---
		PT946	b1	NA	8	---
		1819B	b2	Manual	---	---
Reactor Coolant Drain Tank to Gas Analyzer Line	123a	1600A	NA	SOV	11	---
		1655	a1	Manual	---	---
		1789	a2	AOV	---	60
Standby Auxiliary Feedwater Line to Steam Generator B	123b	9704B	a1	MOV	---	---
		9725	a1	Manual	---	---
		9724	a1	Manual	6	---
		CLIC	a2	NA	18	---
Excess Letdown Heat Exchanger Cooling Water Supply	124a	743	a1	Check	---	---
		CLIC	a2	NA	19	---
Post Accident Air Sample to Common Return	124b	1572	a1	Manual	---	---
		1573	a2	Manual	---	---
		1574	a2	Manual	---	---
Excess Letdown Heat Exchanger Cooling Water Return	124c	745	a1	AOV	20,37	---
		CLIC	a2	NA	19	---
Post Accident Air Sample to Fan C	124d	1569	a1	Manual	---	---
		1570	a2	Manual	---	---
		1571	a2	Manual	---	---
Component Cooling Water from Reactor Coolant Pump B	125	759B	a1	MOV	---	---
		CLIC	a2	NA	19	---
Component Cooling Water from Reactor Coolant Pump A	126	759A	a1	MOV	---	---
		CLIC	a2	NA	19	---
Component Cooling Water to Reactor Coolant Pump A	127	749A	a1	MOV	37	---
		750A	a2	Check	30	---
		CLIC	a2	NA	19	---
Component Cooling Water to Reactor Coolant Pump B	128	749B	a1	MOV	37	---
		750B	a2	Check	30	---
		CLIC	a2	NA	19	---

System	Penetration No.	Valve/ Boundary	Isolation Position	Valve Type	Notes	Maximum Isolation Time (secs.)
Reactor Coolant Drain Tank and Pressurizer Relief Tank to Containment Vent Header	129	1713	a1	Check	---	---
		1793	a2	Manual	---	---
		1786	b1	AOV	---	60
		1787	b2	AOV	---	60
Component Cooling Water from Reactor Support Cooling	130	814	a1	MOV	---	60
		CLIC	a2	NA	19	---
Component Cooling Water to Reactor Support Cooling	131	813	a1	MOV	---	60
		CLIC	a2	NA	19	---
Containment Mini-Purge Exhaust	132	7970	a1	AOV	---	5
		7971	a2	AOV	---	5
		Cap	a2	NA	29	---
Residual Heat Removal Pump Suction from Hot Leg A	140	701	a1	MOV	17	---
		2763	a1	Manual	6	---
		2786	a1	Manual	6	---
		CLOC	a2	NA	16	---
Residual Heat Removal Pump A Suction from Sump B	141	850A	a1	MOV	21	---
		CLOC	a2	NA	16	---
		851A	a2	MOV	30	---
		1813A	b1,b2	MOV	32	---
Residual Heat Removal Pump B Suction from Sump B	142	850B	a1	MOV	21	---
		CLOC	a2	NA	16	---
		851B	a2	MOV	30	---
		1813B	b1,b2	MOV	32	---
Reactor Coolant Drain Tank Discharge Line	143	1003A	a1	AOV	---	60
		1003B	a1	AOV	---	60
		1709G	a1	Manual	6	---
		1722	a1	Manual	---	---
		1721	a2	AOV	---	60
Reactor Compartment Cooling Unit A Supply	201a	4757	a1	Manual	23	---
		4775	a1	Manual	---	---
		CLIC	a2	NA	28	---
Reactor Compartment Cooling Unit B Return	201b	4636	a1	Manual	22	---
		4658	a1	NA	---	---
		4776	a1	Manual	---	---
		PI-2141	a1	NA	---	---
		Cap(PI-2141)	a1	NA	---	---
		CLIC	a2	NA	28	---
Hydrogen Recombiner B (Pilot)	202a	1076B	a1	Manual	---	---
		10211S1	a2	SOV	---	5

System	Penetration No.	Valve/ Boundary	Isolation Position	Valve Type	Notes	Maximum Isolation Time (secs.)
Hydrogen Recombiner B (Main)	202b	1084B	a1	Manual	---	---
		10213S1	a2	SOV	---	5
Containment Pressure Transmitter PT947 and PT948	203a	PT947	a1	NA	8	---
		1819C	a2	Manual	---	---
		PT948	b1	NA	8	---
		1819D	b2	Manual	---	---
Post Accident Air Sample from Fan D	203b	1563	a1	Manual	---	---
		1564	a2	Manual	---	---
		1565	a2	Manual	---	---
Post Accident Air Sample from Common Header	203c	1566	a1	Manual	---	---
		1567	a2	Manual	---	---
		1568	a2	Manual	---	---
Purge Supply Duct	204	ACD93	a1,a2	Blind Flange	---	---
		5869	NA	AOV	25	---
Hot Leg Loop B Sample	205	955	NA	AOV	11	---
		956D	a1	Manual	---	---
		966C	a2	AOV	---	60
Pressurizer Liquid Space Sample	206a	953	NA	AOV	11	---
		956E	a1	Manual	---	---
		966B	a2	AOV	---	60
Steam Generator A Sample	206b	CLIC	a1	NA	18	---
		5735	a2	AOV	---	60
		5749	a2	Manual	---	---
Pressurizer Steam Space Sample	207a	951	NA	AOV	11	---
		956F	a1	Manual	---	---
		966A	a2	AOV	---	60
Steam Generator B Sample	207b	CLIC	a1	NA	18	---
		5736	a2	AOV	---	60
		5754	a2	Manual	---	---
Reactor Compartment Cooling Unit B Supply	209a	4635	a1	Manual	23	---
		4637	a1	Manual	---	---
		CLIC	a2	NA	28	---
Reactor Compartment Cooling Unit A Return	209b	4638	a1	Manual	22	---
		4758	a1	Manual	---	---
		4759	a1	Relief	---	---
		PI-2232	a1	NA	---	---
		Cap(PI-2232)	a1	NA	---	---
		CLIC	a2	NA	28	---
Oxygen Makeup to Recombiners A & B	210	1080A	a1	Manual	---	---
		10214S1	a2	SOV	---	5
		10214S	NA	SOV	11	---
		10215S1	a2	SOV	---	5
		10215S	NA	SOV	11	---

System	Penetration No.	Valve/ Boundary	Isolation Position	Valve Type	Notes	Maximum Isolation Time (secs.)
Purge Exhaust Duct	300	ACD92	a1,a2	Blind	---	---
		5879	NA	Flange AOV	25	---
Auxiliary Steam Supply to Containment	301	6151	a1	Manual	---	---
		6165	a2	Manual	---	---
Auxiliary Steam Condensate Return	303	6152	a1	Manual	---	---
		6175	a2	Manual	---	---
Hydrogen Recombiner A (Pilot)	304a	1076A	a1	Manual	---	---
		10205S1	a2	SOV	---	5
Hydrogen Recombiner A (Main)	304b	1084A	a1	Manual	---	---
		10209S1	a2	SOV	---	5
Containment Air Sample Post Accident	305a	1554	a1	Manual	---	---
		1555	a2	Manual	---	---
		1556	a2	Manual	---	---
Containment Air Sample Inlet	305b	1598	a1	AOV	---	60
		1599	a2	AOV	---	60
Containment Air Sample Post Accident	305C	1557	a1	Manual	---	---
		1558	a2	Manual	---	---
		1559	a2	Manual	---	---
Containment Air Sample Post Accident	305D	1560	a1	Manual	---	---
		1561	a2	Manual	---	---
		1562	a2	Manual	---	---
Containment Air Sample Out	305E	1596	a1	Manual	---	---
		1597	a2	AOV	---	60
Fire Service Water	307	9227	a1	AOV	---	60
		9229	a2	Check	---	---
Service Water from Fan Cooler A	308	4629	a1	Manual	22	---
		4633	a1	Manual	---	---
		4655	a1	Relief	---	---
		FIA-2033	a1	NA	---	---
		Caps(2)(FIA-2033)	a1	NA	---	---
		TIA-2010	a1	NA	---	---
		CLIC	a2	NA	28	---
Mini-Purge Supply	309	7445	a1	AOV	---	5
		7478	a2	AOV	---	5
Instrument Air to Containment	310a	5392	a1	AOV	---	60
		5393	a2	Check	---	---
Service Air to Containment	310b	7141	a1	Manual	---	---
		7226	a2	Check	---	---

System	Penetration No.	Valve/ Boundary	Isolation Position	Valve Type	Notes	Maximum Isolation Time (secs.)
Service Water from Fan Cooler B	311	4630	a1	Manual	22	---
		4634	a1	Manual	---	---
		4656	a1	Relief	---	---
		FIA-2034	a1	NA	---	---
		Caps(2)(FIA-2034)	a1	NA	---	---
		TIA-2011	a1	NA	---	---
		CLIC	a2	NA	28	---
Service Water to Fan Cooler D	312	4642	a1	Manual	23	---
		4646	a1	Manual	---	---
		12500K	a1	Manual	---	---
		PI-2144	a1	NA	---	---
		CLIC	a2	NA	28	---
Leakage Test Depressuriza-tion	313	NA	a1	Blind	---	---
		Cap	a2	Flange	---	---
		7444	a2	NA MOV	26	---
Service Water From Fan Cooler C	315	4643	a1	Manual	22	---
		4647	a1	Manual	---	---
		4659	a1	Relief	---	---
		FIA-2035	a1	NA	---	---
		Caps(2)(FIA-2035)	a1	NA	---	---
		TIA-2012	a1	NA	---	---
		CLIC	a2	NA	28	---
Service Water to Fan Cooler B	316	4628	a1	Manual	23	---
		4632	a1	Manual	---	---
		PI-2138	a1	NA	---	---
		CLIC	a2	NA	28	---
Leakage Test Supply	317	SAT01	a1	Blind	---	---
		Cap	a2	Flange	---	---
		7443	a2	NA MOV	26	---
Deadweight Tester	318	NA	a1,a2	NA	27	---
Service Water To Fan Cooler A	319	4627	a1	Manual	23	---
		4631	a1	Manual	---	---
		PI-2142	a1	NA	---	---
		CLIC	a2	NA	28	---
Service Water to Fan Cooler C	320	4641	a1	Manual	23	---
		4645	a1	Manual	---	---
		12500H	a1	Manual	---	---
		PI-2136	a1	NA	---	---
		CLIC	a2	NA	28	---
Steam Generator A Blowdown	321	5738	a1	AOV	---	60
		5752	a1	Manual	---	---
		CLIC	a2	NA	18	---
Steam Generator B Blowdown	322	5737	a1	AOV	---	60
		5756	a1	Manual	---	---
		CLIC	a2	NA	18	---

System	Penetration No.	Valve/ Boundary	Isolation Position	Valve Type	Notes	Maximum Isolation Time (secs.)
Service Water from Fan Cooler D	323	4644	a1	Manual	22	---
		4648	a1	Manual	---	---
		4660	a1	Relief	---	---
		FIA-2036	a1	NA	---	---
		Caps(2)(FIA-2036)	a1	NA	---	---
		TIA-2013	a1	NA	---	---
		CLIC	a2	NA	28	---
Demineralized Water to Containment	324	8418	a1	AOV	---	---
		8419	a2	Check	---	---
Hydrogen Monitor Instrumentation Line	332a	922	a1	SOV	---	5
		924	a1	SOV	---	5
		CLOC	a2	NA	31	---
		7452	b1	Manual	---	---
		Cap(7452)	b2	NA	---	---
Hydrogen Monitor Instrumentation Line	332b	923	a1	SOV	---	5
		CLOC	a2	NA	31	---
		7456	b1	Manual	---	---
		Cap(7456)	b2	NA	---	---
Containment Pressure Transmitters PT944, PT949, and PT950	332c	PT944	a1	NA	8	---
		1819G	a2	Manual	---	---
		PT949	b1	NA	8	---
		1819E	b2	Manual	---	---
		PT950	c1	NA	8	---
		1819F	c2	Manual	---	---
Hydrogen Monitor Instrumentation Line	332d	921	a1	SOV	---	5
		CLOC	a2	NA	31	---
		7448	b1	Manual	---	---
		Cap(7448)	b2	NA	---	---
Main Steam from Steam Generator A	401	3411	a1	Relief	---	---
		3413A	a1	Manual	24	---
		3455	a1	Manual	---	---
		3505A	a1	MOV	---	---
		3505C	a1	Manual	---	---
		3509	a1	Relief	---	---
		3511	a1	Relief	---	---
		3513	a1	Relief	---	---
		3515	a1	Relief	---	---
		3517	a1	AOV	24	---
		3521	a1	Manual	24	---
		3615	a1	Manual	---	---
		3669	a1	Manual	24	---
		11027	a1	Manual	---	---
		11029	a1	Manual	---	---
		11031	a1	Manual	---	---
		PS-2092	a1	NA	8	---
		PT-468	a1	NA	8	---
		PT-469	a1	NA	8	---
		PT-469A	a1	NA	8	---
		PT-482	a1	NA	8	---
		End Caps	a1	NA	33	---
		CLIC	a2	NA	18	---

System	Penetration No.	Valve/ Boundary	Isolation Position	Valve Type	Notes	Maximum Isolation Time (secs.)
Main Steam from B Steam Generator	402	3410	a1	Relief	---	---
		3412A	a1	Manual	24	---
		3456	a1	Manual	---	---
		3504A	a1	MOV	---	---
		3504C	a1	Manual	---	---
		3508	a1	Relief	---	---
		3510	a1	Relief	---	---
		3512	a1	Relief	---	---
		3514	a1	Relief	---	---
		3516	a1	AOV	24	---
		3520	a1	Manual	24	---
		3614	a1	Manual	---	---
		3668	a1	Manual	24	---
		11021	a1	Manual	---	---
		11023	a1	Manual	---	---
		11025	a1	Manual	---	---
		PS-2093	a1	NA	8	---
		PT-478	a1	NA	8	---
		PT-479	a1	NA	8	---
		PT-483	a1	NA	8	---
		End caps	a1	NA	33	---
		CLIC	a2	NA	18	---
Feedwater Line to Steam Generator A	403	3993	a1	Check	34	---
		3995X	a1	Manual	---	---
		4000C	a1	Check	34	---
		4003	a1	Check	34	---
		4003A	a1	Manual	---	---
		4011A	a1	Manual	---	---
		4099E	a1	Manual	---	---
		8651	a1	Manual	---	---
		CLIC	a2	NA	18	---
Feedwater Line to Steam Generator B	404	3992	a1	Check	34	---
		3994E	a1	Manual	---	---
		3994X	a1	Manual	---	---
		4000D	a1	Check	34	---
		4004	a1	Check	34	---
		4012A	a1	Manual	---	---
		4004A	a1	Manual	---	---
		8650	a1	Manual	---	---
		CLIC	a2	NA	18	---
Personnel Hatch	1000	NA	a1	NA	---	---
		NA	a2	NA	---	---
Equipment Hatch	2000	NA	a1	NA	---	---
		NA	a2	NA	---	---

Notes

(1) This penetration is closed by a double-gasketed blind flange on both ends. Both flanges are necessary for containment integrity purposes since the test connections between the two gaskets for each flange do not meet the requirements of ANSI-56.8. Therefore, the innermost gasket for each flange (i.e., gasket closest to containment wall) provides a single containment barrier.

(2) This valve is not a containment isolation valve due to the installed downstream welded flange, but is normally maintained locked closed to provide additional assurance of containment integrity.

(3) The end of the fuel transfer tube inside containment is closed by a double-gasketed blind flange to prevent leakage of spent fuel pit water into the containment during plant operation. Each gasket provides a single containment isolation barrier. This flange also serves as protection against leakage from the containment following a loss-of-coolant accident.

(4) The charging system is a closed system outside containment (CLOC). Verification of this closed system as a containment isolation boundary is accomplished via normal system operation (≈ 2235 psig).

(5) The safety injection system is a closed system outside containment (CLOC). Verification of this closed system as a containment isolation boundary is accomplished via inservice and/or shutdown leakage checks. (Safety Injection Pump discharge pressure is ≈ 1500 psig)

(6) This valve is not locked closed; however, the valve is maintained closed by testing and system lineup procedures and has a "Boundary Control Tag" per PTT-23A. This provides equivalent assurance of proper valve position.

(7) The pressure indicator only provides local indication; therefore, a second closed isolation device is required (i.e., indicator's root valve). However, the root valve (12406 or 12407) is listed with the indicator, not as a second barrier due to the design of the line.

(8) The pressure transmitter assembly, by its design, provides a containment pressure boundary. Since the transmitter provides direct indication to the control room, operators would be aware of its failure. Therefore, the transmitter's root valve(s) is normally maintained open.

(9) This penetration was only utilized during initial plant construction and is maintained inactive. Since there is no test connection between 5129 and the threaded cap, all observed leakage during testing is applied to 5129. Therefore, the outside cap is not a CIB.

(10) The containment spray system is a closed system outside containment (CLOC). Verification of this closed system as a containment isolation boundary is accomplished via inservice and/or shutdown leakage checks. (Containment Spray pump discharge pressure is ≈ 285 psig)

(11) This valve receives a containment isolation signal; however, credit is not taken for this function since the valve is inside the missile barrier or outside the necessary class break boundary. Therefore, this valve is not a containment isolation valve and not subject to 10 CFR 50

Appendix J testing nor Technical Specification 3.6.3. The containment isolation signal only enhances containment isolation.

(12) Both containment spray test lines have a locked closed manual valve that leads to a common line with two normally closed manual valves. The valves in this common line may be opened during a pump test since necessary containment isolation is maintained (see Safety Evaluation NSL-0000-SE015).

(13) The test line and root valves for the pressure indicators can be opened during testing of the CS pumps since manual valves 868 A/B are closed, thus providing the necessary containment boundary for the short duration of the test.

(14) The second isolation barrier (CLOC) is provided by the volume control tank and connecting piping per letter from D.D. DiIanni, NRC, to R.W. Kober, RG&E, dated January 30, 1987. This barrier is not required to be tested.

(15) Only one isolation barrier is provided since there are two Event V check valves in the SI cold legs, and two check valves and a normally closed motor-operated valve in the SI hot legs. This configuration was accepted by the NRC during the SEP (NUREG-0821, Section 4.22.2).

(16) The residual heat removal lines for this penetration are a closed loop outside containment (CLOC). Verification of this closed system as a containment isolation boundary is accomplished via inservice and/or shutdown leakage checks. (Residual Heat Removal pump discharge pressure is ≈ 175 psig)

(17) Appendix J containment leakage testing is not required per letter from D.M. Crutchfield, NRC, to J.E. Maier, RG&E, dated May 6, 1981.

(18) The Main Steam, Main Feedwater, Standby Auxiliary Feedwater and S/G Blowdown penetrations take credit for the steam generator tubes and shell as a closed system inside containment (CLIC). Verification of this closed system as a containment isolation boundary is accomplished via normal power operation (750 psig). The isolation valves outside containment for these penetrations do not require Appendix J testing.

(19) The component cooling water lines inside containment for this penetration are a closed loop inside containment (CLIC). Verification of this closed system as a containment isolation boundary is accomplished via inservice and/or shutdown leakage checks. (Component Cooling Water pump discharge pressure is ≈ 85 psig)

(20) Operations is instructed to manually close AOV 745 following a containment isolation signal to provide additional redundancy.

(21) Sump lines are in operation and filled with fluid following an accident; therefore, 10CFR50, Appendix J leakage testing is not required for this penetration. See letter from D.M. Crutchfield, NRC, to J.E. Maier, RG&E, dated May 6, 1981.

(22) This manual valve is subjected to an annual hydrostatic leakage test (> 60 psig) and is not subject to 10CFR50, Appendix J leakage testing. See NUREG-0821, Section 4.22.3.

(23) The Service Water System operates at a higher pressure (80 psig) than the containment accident pressure (60 psig) and is missile protected inside containment. Therefore, this manual valve is used for flow control only and is not subject to 10CFR50, Appendix J leakage testing. See NUREG-0821, Section 4.22.3.

(24) This valve does not receive an automatic containment isolation signal but is normally open at power since it either improves the reliability of an essential standby system or is required for power operation. However, this valve can either be closed from the control room or locally when required.

(25) The flanges and associated double seals provide containment isolation and ensure that containment integrity is maintained for all modes of operation above cold shutdown. When the flanges are removed during cold shutdown conditions, containment integrity is provided by the valve. This valve is not required to be operable above cold shutdown and does not require 10CFR50, Appendix J leakage testing, nor a maximum isolation time.

(26) Motor-Operated Valves 7443 and 7444 are powered from non-safety-related Bus 15. However, this is acceptable since the valves are maintained closed at power and are in series with a blind flange. In addition, operators would be aware of a loss of Bus 15 by a loss of control room indication for these two valves (Safety Evaluation NSL-0000-SE021).

(27) This penetration is decommissioned and welded shut.

(28) The service water system piping inside containment for this penetration is a closed system inside containment (CLIC). Verification of this closed system as a containment isolation boundary is accomplished via inservice and/or shutdown leakage checks. (Service Water Pump discharge pressure is ≈ 80 psig)

(29) This end cap is used for flow balancing. However, it cannot be opened above cold shutdown without first performing a safety evaluation.

(30) This valve will no longer be classified as a CIV following NRC approval of the Amendment Request to remove the listing of CIVs from Technical Specifications since another boundary has been identified. However, in the interim, the valve will continue to be identified and tested as a CIV consistent with Technical Specifications. This note applies to valves 750A, 750B, 851A and 851B.

(31) Acceptable isolation capability is provided for these instrument lines by two isolation boundaries outside containment. One of the boundaries is a Seismic Category I closed system which is subject to Type C leakage testing under 10 CFR 50 Appendix J.

(32) There is no second containment barrier for this branch line. This is addressed by Safety Evaluation NSL-0000-SE015.

(33) These end caps include those found on the sensing lines for PS-2092, PT-468, PT-469, PT-469A, and PT-482 (Penetration 401) and PS-2093, PT-479, and PT-483 (Penetration 402).

(34) This check valve can be open when containment isolation is required in order to provide necessary feedwater or auxiliary feedwater to the steam

generators. The check valve will close once feedwater is isolated to the affected steam generator (NUREG-0821, Section 4.22.1).

(35) AOV 959 cannot be tested to 10 CFR 50 Appendix J requirements since there are no available test connections. Therefore, the fuses for AOV 959 are removed with boundary control tags in place to maintain this valve closed. Manual valve 957 is also maintained closed to provide additional assurance of containment integrity; however, valve 957 is not a containment isolation valve subject to Technical Specification 3.6.3.

(36) AOV 371 is a containment isolation valve for both penetrations 111 and 112.

(37) The Technical Specifications currently identify a 60 second maximum isolation signal for this valve (745, 749A and 749B). However, there is no automatic containment isolation signal to this valve and none required.

ATTACHMENT E

Table of Technical Specification Changes

Technical Specification Changes		
#	Changes	Effect
1.	Removed reference to Table 3.6-1 from Technical Specifications 3.6.3.1, 4.4.5.1, and 4.4.6.2. Added statement to Bases for Technical Specification 3.6 that containment isolation boundaries are listed in Procedure A-3.3.	No technical change. Specifications are now consistent with Generic Letter 91-08.
2.	Removed Table 3.6-1 from Technical Specifications and placed information in Procedure A-3.3.	Valve listing remains in a licensee controlled document under Technical Specification change controls.
3.	Removed definition of leakage inoperability from Technical Specification 3.6.3.1.	Definition is found in Technical Specification 4.4.2.2. Eliminated redundant discussion of leakage acceptance criteria.
4.	Added statement related to intermittent operation of boundaries to both Technical Specification 3.6.1 and the bases.	No technical change. Specification now consistent with Generic letter 91-08.
5.	Removed note associated with Technical Specification 3.6.5.	Mini-purge valves have been installed so specification is considered effective. No technical change.
6.	Added definition of "isolation boundary" to Bases for Technical Specification 3.6.	No technical change. Clarification of "isolation boundary" provides consistency with UFSAR Table 6.2-15.
7.	Updated reference list contained in Bases for Technical Specifications 3.6, 3.8, and 4.4.	No technical change.
8.	Revised action statement of Technical Specification 3.8.1 section a.	Clarification only. Specification now consistent with Standard Technical Specifications.

Technical Specification Changes		
#	Changes	Effect
9.	Revised action statement of Technical Specification 3.8.3.	No technical change. Specification now specifically addresses affected containment penetrations.
10.	Revised bases for Technical Specification 3.8.	No technical change. Bases are now consistent with Standard Technical Specifications and support changes to 3.8.1 section a and 3.8.3.
11.	Added "Pt" and necessary definitions to Technical Specification 4.4.1.4 section a.	Addition of "Pt" definition provides clarification of testing type consistent with 10 CFR 50, Appendix J. All terms in 4.4.1.4, section a are now fully defined. No technical change.
12.	Added to the definition of "Lt" in Technical Specification 4.4.1.4 section b.	Addition of "Lt" definition provides clarification consistent with 10 CFR 50, Appendix J. All terms in 4.4.1.4, section b are now fully defined. No technical change.
13.	Added definition of "Pa" and "Lam" to Technical Specification 4.4.1.4.	Addition of "Pa" and "Lam" provides clarification consistent with 10 CFR 50, Appendix J. All terms in 4.4.1.4 now fully defined. No technical change.
14.	Added steam generator inspection/maintenance penetration to Technical Specification 4.4.1.5 section a (ii).	Addition of this penetration provides testing criteria similar to the equipment hatch and containment air locks.
15.	Revised first line of Technical Specification 4.4.1.5, section a (ii).	Minor clarification only. No technical change.
16.	Revised acceptance criteria provided in Technical Specification 4.4.2.2	Clarification only. No technical change.

[illegible]

Technical Specification Changes		
#	Changes	Effect
17.	Replaced "isolation valve" with "isolation boundary" in Technical Specification 4.4.2.3 and the Bases for section 4.4.	Minor clarification only. Specification and bases are now consistent with the revised Technical Specification 3.6.3.
18.	Removed notes associated with Technical Specification 4.4.2.4 section a. Also, deleted reference to section d.	Mini-purge valves have been installed so specification is considered effective. Section d will be removed from Technical Specifications with this amendment.
19.	Added steam generator inspection/maintenance penetration to Technical Specification 4.4.2.4 section b.	Addition of this penetration provides testing criteria similar to the equipment hatch and containment air locks.
20.	Removed Technical Specification 4.4.2.4 section d and associated note.	Blind flanges have been installed so specification is considered effective. No technical change.
21.	Revised statement for Technical Specification 4.4.5.1.	Specification now consistent with Standard Technical Specifications.
22.	Revised statement for Technical Specification 4.4.6.2.	Specification now consistent with Standard Technical Specifications.

3.6 Containment System

Applicability:

Applies to the integrity of reactor containment.

Objective:

To define the operating status of the reactor containment for plant operation.

Specification:

3.6.1 Containment Integrity

a. Except as allowed by 3.6.3, containment integrity shall not be violated unless the reactor is in the cold shutdown condition. Closed valves may be opened on an intermittent basis under administrative control.

b. The containment integrity shall not be violated when the reactor vessel head is removed unless the boron concentration is greater than 2000 ppm.

c. Positive reactivity changes shall not be made by rod drive motion or boron dilution whenever the containment integrity is not intact unless the boron concentration is greater than 2000 ppm.

3.6.2 Internal Pressure

If the internal pressure exceeds 1 psig or the internal vacuum exceeds 2.0 psig, the condition shall be corrected within 24 hours or the reactor rendered subcritical.

[illegible]

3.6.3 Containment Isolation ~~Valves~~ Boundaries

3.6.3.1 With ~~one or more of the isolation valve(s) specified in Table 3.6-1 inoperable, maintain at least one isolation boundary operable in each affected penetration that is open and~~ a containment isolation boundary inoperable for one or more containment penetrations, either:

a. Restore ~~the~~ each inoperable ~~valve(s)~~ boundary to ~~operable~~ OPERABLE status within 4 hours, or

b. Isolate each affected penetration within 4 hours by use of at least one deactivated automatic valve secured in the isolation position, one closed manual valve, or a blind flange, or

c. ~~Isolate each affected penetration within 4 hours by use of at least one closed manual valve or blind flange, or~~

dc. Be in at least hot shutdown within the next 6 hours and in cold shutdown within the following 30 hours.

~~Isolation valves are inoperable from a leakage standpoint if the leakage is greater than that allowed by 10 CFR 50 Appendix J.~~

3.6.4 Combustible Gas Control

3.6.4.1 When the reactor is critical, at least two independent containment hydrogen monitors shall be operable. One of the monitors may be the Post Accident Sampling System.

3.6.4.2 With only one hydrogen monitor operable, restore a second monitor to operable status within 30 days or be in at least hot shutdown within the next 6 hours.

3.6.4.3 With no hydrogen monitors operable, restore at least one monitor to operable status within 72 hours or be at least hot shutdown within the next 6 hours.

3.6.5 Containment Mini-Purge

Whenever the containment integrity is required, emphasis will be placed on limiting all purging and venting times to as low as achievable. The mini-purge isolation valves will remain closed to the maximum extent practicable but may be open for pressure control, for ALARA, for respirable air quality considerations for personnel entry, for surveillance tests that may require the valve to be open or other safety related reasons.

~~* Becomes effective upon installation of containment mini-purge valves~~

Basis:

The reactor coolant system conditions of cold shutdown assure that no steam will be formed and hence there would be no pressure buildup in the containment if the reactor coolant system ruptures.

The shutdown margins are selected based on the type of activities that are being carried out. The (2000 ppm) boron concentration provides shutdown margin which precludes criticality under any circumstances. When the reactor head is not to be removed, a cold shutdown margin of 1%Δk/k precludes criticality in any occurrence.

Regarding internal pressure limitations, the containment design pressure of 60 psig would not be exceeded if the internal pressure before a major steam break accident were as much as 1 psig.[1] The containment is designed to withstand an internal vacuum of 2.5 psig.[2] The 2.0 psig vacuum is specified as an operating limit to avoid any difficulties with motor cooling.

In order to minimize containment leakage during a design basis accident involving a significant fission product release, penetrations not required for accident mitigation are provided with isolation boundaries. These isolation boundaries consist of either passive devices or active automatic valves and are listed in a procedure under the control of Technical Specification 6.8. Closed manual valves, deactivated automatic valves secured in their closed position (including check valves with flow through the valve secured), blind flanges and closed systems are considered passive devices. Automatic isolation valves designed to close following an accident without operator action, are considered active devices. Two isolation devices are provided for each mechanical penetration, such that no single credible failure or malfunction of an active component can cause a loss of isolation, or result in a leakage rate that exceeds limits assumed in the safety analyses.[3]

In the event that one isolation boundary is inoperable, the affected penetration must be isolated with at least one boundary that is not affected by a single active failure. Isolation boundaries that meet this criterion are a closed and deactivated automatic containment isolation valve, a closed manual valve, or a blind flange.

The opening of closed containment isolation valves on an intermittent basis under administrative control includes the following considerations: (1) stationing an individual qualified in accordance with station procedures, who is in constant communication with the control room, at the valve controls, (2) instructing this individual to close these valves in an accident situation, and (3) assuring that environmental conditions will not preclude access to isolate the boundary and that this action will prevent the release of radioactivity outside the containment.

References:

(1) Westinghouse Analysis, "Report for the BAST Concentration Reduction for R. E. Ginna", August 1985, submitted via application for Amendment to the Operating License in a letter from R.W. Kober, RG&E, to H.A. Denton, NRC, dated October 16, 1985

(2) UFSAR - Section 6.2.1.4

(3) UFSAR - Section 6.2.4

3.8 REFUELING

Applicability

Applies to operating limitations during refueling operations.

Objective

To ensure that no incident could occur during refueling operations that would affect public health and safety

Specification

3.8.1 During refueling operations the following conditions shall be satisfied.

a. ~~The equipment door, or a closure plate that restricts air flow from containment, and at least one personnel door in the equipment door or closure plate and in the personnel air lock shall be properly closed. In addition, all automatic containment isolation valves shall be operable or at least one valve in each line shall be locked closed. The 48 inch shutdown purge valves must also be operable or closed or the associated flange must be installed.~~

Containment penetrations shall be in the following status:

i. The equipment hatch shall be in place with at least one access door closed, or the closure plate that restricts air flow from containment shall be in place,

ii. At least one access door in the personnel air lock shall be closed, and

iii. Each penetration providing direct access from the containment atmosphere to the outside atmosphere shall be either:

1. Closed by an isolation valve, blind flange, or manual valve, or

2. Be capable of being closed by an OPERABLE automatic shutdown purge or mini-purge valve.

b. Radiation levels in the containment shall be monitored continuously.

c. Core subcritical neutron flux shall be continuously monitored by at least two source range neutron monitors, each with continuous visual indication in the control room and one with audible indication in the containment and control room available whenever core geometry is being changed. When core geometry is not being changed at

flange. If this condition is not met, all operations involving movement of fuel or control rods in the reactor vessel shall be suspended.

3.8.2 If any of the specified limiting conditions for refueling is not met, refueling of the reactor shall cease; work shall be initiated to correct the violated conditions so that the specified limits are met; no operations which may increase the reactivity of the core shall be made.

3.8.3 If the conditions of 3.8.1.d are not met, then in addition to the requirements of 3.8.2, ~~close all containment penetrations providing direct access from the containment atmosphere to the outside atmosphere~~ isolate the shutdown purge and mini-purge penetrations within 4 hours.

<u>Basis</u>:

The equipment and general procedures to be utilized during refueling are discussed in the UFSAR. Detailed instructions, the above specified precautions, and the design of the fuel handling equipment incorporating built-in interlocks and safety features, provide assurance that no incident could occur during the refueling operations that would result in a hazard

[illegible]

provided on the lifting hoist to prevent movement of more than one fuel assembly at a time. The spent fuel transfer mechanism can accommodate only one fuel assembly at a time. In addition, interlocks on the auxiliary building crane will prevent the trolley from being moved over stored racks containing spent fuel.

The operability requirements for residual heat removal loops will ensure adequate heat removal while in the refueling mode. The requirement for 23 feet of water above the reactor vessel flange while handling fuel and fuel components in containment is consistent with the assumptions of the fuel handling accident analysis.

The analysis~~[4]~~[3] for a fuel handling accident inside containment establishes acceptable offsite limiting doses following rupture of all rods of an assembly operated at peak power. No credit is taken for containment isolation or effluent filtration prior to release. Requiring closure of ~~the containment openings and~~ penetrations which provide direct access from containment atmosphere to the outside atmosphere establishes additional margin for the fuel handling accident and establishes a seismic envelope to protect against the potential consequences of seismic events during refueling. Isolation of these penetrations may be achieved by an OPERABLE shutdown purge or mini-purge valve, blind flange, or isolation valve. An OPERABLE shutdown purge or mini-purge valve is capable of being automatically isolated by R11 or R12. Penetrations which do not provide direct access from containment atmosphere to the outside atmosphere support containment integrity by either a closed system, necessary isolation valves, or a material which can provide a temporary ventilation barrier, at atmospheric pressure, for the containment penetrations during fuel movement.

[illegible]

[illegible]

[illegible]

[illegible]

References

(1) ~~FSAR — Section 9.5.2~~ UFSAR Sections 9.1.4.4 and 9.1.4.5

(2) Reload Transient Safety Report, Cycle 14

(3) ~~FSAR — Section 9.3.1~~ UFSAR Section 15.7.3.3

~~(4) Updated Final Safety Analysis Report, Section 15.7~~

4.4.1.4 Acceptance Criteria

a. The leakage rate Ltm shall be ~~less than~~ <0.75 Lt at Pt. Pt is defined as the containment vessel reduced test pressure which is greater than or equal to 35 psig. Ltm is defined as the total measured containment leakage rate at pressure Pt. Lt is defined as the maximum allowable leakage rate at pressure Pt.

b. Lt shall be determined as $Lt = La \left(\frac{Pt}{Pa}\right)^{1/2}$ which equals .1528 percent weight per day at 35 psig. Pa is defined as the calculated peak containment internal pressure related to design basis accidents which is greater than or equal to 60 psig. La is defined as the maximum allowable leakage rate at Pa which equals .2 percent weight per day.

c. The leakage rate at Pa (Lam) shall be <0.75 La. Lam is defined as the total measured containment leakage rate at pressure Pa.

4.4.1.5 Test Frequency

a. A set of three integrated leak rate tests shall be performed at approximately equal intervals during each 10-year service period. The third test of each set shall be conducted in the final year of the 10-year service period or one year before or after the final year of the 10-year service period provided:

   i. the interval between any two Type A tests does not exceed four years.

   ii. following ~~one~~ each in-service inspection, the containment airlocks, the steam generator inspection/maintenance penetration, and the equipment hatch are leak tested prior to returning the plant to operation, and

   iii. any repair, replacement, or modification of a containment barrier resulting from the inservice inspections shall be followed by the appropriate leakage test.

b. The local leakage rate shall be measured for each of the following components:

i. Containment penetrations that employ resilient seals, gaskets, or sealant compounds, piping penetrations with expansion bellows and electrical penetrations with flexible metal seal assemblies.

ii. Air lock and equipment door seals.

iii. Fuel transfer tube.

iv. Isolation valves on the testable fluid systems lines penetrating the containment.

v. Other containment components, which require leak repair in order to meet the acceptance criterion for any integrated leakage rate test.

4.4.2.2 Acceptance Criterion

~~The total leakage from all penetrations and isolation valves shall not exceed~~ Containment isolation boundaries are inoperable from a leakage standpoint when the demonstrated leakage of a single boundary or cumulative total leakage of all boundaries is greater than 0.60 La.

4.4.2.3 Corrective Action

a. If at any time it is determined that the total leakage from all penetrations and isolation ~~valves~~ boundaries exceeds 0.60 La, repairs shall be initiated immediately.

b. If repairs are not completed and conformance to the acceptance criterion of 4.4.2.2 is not demonstrated within 48 hours, the reactor shall be shutdown and depressurized until repairs are effected and the local leakage meets the acceptance criterion.

c. If it is determined that the leakage through a mini-purge supply and exhaust line is greater than 0.05 La an engineering evaluation shall be performed and plans for corrective action developed.

4.4.2.4 Test Frequency

a. Except as specified in b.~~,~~ and c.~~, and d.~~ below, individual penetrations and containment isolation valves shall be tested during each reactor shutdown for refueling, or other convenient intervals, but in no case at intervals greater than two years. ~~In addition, the four mini-purge isolation valves shall be tested at six month intervals.*~~

b. The containment equipment hatch, fuel transfer tube, steam generator inspection/maintenance penetration, and shutdown purge system flanges shall be tested at each refueling shutdown or after each use, if that be sooner.

~~* (This requirement is applicable for two years following isolation of the mini-purge system).~~

c. The containment air locks shall be tested at intervals of no more than six months by pressurizing the space between the air lock doors. In addition, following opening of the air lock door during the interval, a test shall be performed by pressurizing between the dual seals of each door opened, within 48 hours of the opening, unless the reactor was in the cold shutdown condition at the time of the opening or has been subsequently brought to the cold shutdown condition. A test shall also be performed by pressurizing between the dual seals of each door within 48 hours of leaving the cold shutdown condition, unless the doors have not been open since the last test performed either by pressurizing the space between the air lock doors or by pressurizing between the dual door seals.

~~d. Within 24 hours after each closing when containment integrity is required, except when being used for multiple cycles and then at least once per 72 hours, each containment purge isolation valve shall be tested to verify that when the measured leakage rate is added to the leakage rates determined for all other Type B and C penetrations, the combined leakage rate is less than or equal to 0.60 La.~~

~~* This paragraph may be deleted upon installation of the~~

~~containment shutdown purge system flanges.~~

the tendon containing 6 broken wires) shall be inspected. The accepted criterion then shall be no more than 4 broken wires in any of the additional 4 tendons. If this criterion is not satisfied, all of the tendons shall be inspected and if more than 5% of the total wires are broken, the reactor shall be shut down and depressurized.

4.4.4.2 Pre-Stress Confirmation Test

a. Lift-off tests shall be performed on the 14 tendons identified in 4.4.4.1a above, at the intervals specified in 4.4.4.1b. If the average stress in the 14 tendons checked is less than 144,000 psi (60% of ultimate stress), all tendons shall be checked for stress and retensioned, if necessary, to a stress of 144,000 psi.

b. Before reseating a tendon, additional stress (6%) shall be imposed to verify the ability of the tendon to sustain the added stress applied during accident conditions.

4.4.5 Containment Isolation Valves

4.4.5.1 Each containment isolation valve ~~specified in Table 3.6-1~~ shall be demonstrated to be ~~operable~~ OPERABLE in accordance with the Ginna Station Pump and Valve Test program submitted in accordance with 10 CFR 50.55a.

4.4.6 Containment Isolation Response

4.4.6.1 Each containment isolation instrumentation channel shall be demonstrated OPERABLE by the performance of the CHANNEL CHECK, CHANNEL CALIBRATION, and CHANNEL FUNCTIONAL TEST operations for the MODES and at the frequencies shown in Table 4.1-1.

4.4.6.2 The ~~RESPONSE TIME~~ response time of each ~~the~~ containment isolation valve~~s, as listed in Table 3.6-1,~~ shall be demonstrated to be within ~~the~~ its limit at least once per 18 months. The response time includes only the valve travel time for ~~all valves which change position~~ those valves which the safety analysis assumptions take credit for a change in valve position in response to a containment isolation signal.

The Specification also allows for possible deterioration of the leakage rate between tests, by requiring that the total measured leakage rate be only 75% of the maximum allowable leakage rate.

The duration and methods for the integrated leakage rate test established by ANSI N45.4-1972 provide a minimum level of accuracy and allow for daily cyclic variation in temperature and thermal radiation. The frequency of the integrated leakage rate test is keyed to the refueling schedule for the reactor, because these tests can best be performed during refueling shutdowns. Refueling shutdowns are scheduled at approximately one year intervals.

The specified frequency of integrated leakage rate tests is based on three major considerations. First is the low probability of leaks in the liner, because of (a) the use of weld channels to test the leaktightness of the welds during erection, (b) conformance of the complete containment to a 0.1% per day leak rate at 60 psig during preoperational testing, and (c) absence of any significant stresses in the liner during reactor operation. Second is the more frequent testing, at the full accident pressure, of those portions of the containment envelope that are most likely to develop leaks during reactor operation (penetrations and isolation valves) and the low value (0.60 La) of the total leakage that is specified as acceptable ~~from penetrations and isolation valves~~. Third is the tendon stress surveillance program, which provides assurance than an important part of the structural integrity of the containment is maintained.

[illegible]
[illegible]
[illegible]
[illegible]
[illegible]
[illegible]
[illegible]

[illegible]
[illegible]
[illegible]
[illegible]
[illegible]
[illegible]
[illegible]

The basis for specification of a total leakage of 0.60 La from penetrations and isolation ~~valves~~ boundaries is that only a portion of the allowable integrated leakage rate should be from those sources in order to provide assurance that the integrated leakage rate would remain within the specified limits during the intervals between integrated leakage rate tests. Because most leakage during an integrated leak rate test occurs though penetrations and isolation valves, and because for most penetrations and isolation valves a smaller leakage rate would result from an integrated leak test than from a local test, adequate assurance of maintaining the integrated leakage rate within the specified limits is provided. The limiting leakage rates from the Recirculation Heat Removal Systems are judgement values based primarily on assuring that the components could operate without mechanical failure for a period on the order of 200 days after a design basis accident. The test

The pre-stress confirmation test provides a direct measure of the load-carrying capability of the tendon.

If the surveillance program indicates by extensive wire breakage or tendon stress relation that the pre-stressing tendons are not behaving as expected, the situation will be evaluated immediately. The specified acceptance criteria are such as to alert attention to the situation well before the tendon load-carrying capability would deteriorate to a point that failure during a design basis accident might be possible. Thus the cause of the incipient deterioration could be evaluated and corrective action studied without need to shut down the reactor. The containment is provided with two readily removable tendons that might be useful to such a study. In addition, there are 40 tendons, each containing a removable wire which will be used to monitor for possible corrosion effects.

Operability of the containment isolation ~~valves~~ boundaries ensures that the containment atmosphere will be isolated from the outside environment in the event of a release of radioactive material to the containment atmosphere or pressurization of the containment. Performance of cycling tests and verification of isolation times ~~are~~ associated with automatic containment isolation valves is covered by the Pump and Valve Test Program. Compliance with Appendix J to 10 CFR 50 is addressed under local leak testing requirements.

References:

(1) ~~FSAR Section 5.1.2.3~~ UFSAR Section 3.1.2.2.7

(2) ~~FSAR Section 5.1.2~~ UFSAR Section 6.2.6.1

(3) ~~FSAR Section 14.3.5~~ UFSAR Section 15.6.4.3

(4) ~~FSAR Table 6.2-8~~ UFSAR Section 6.3.3.8

(5) ~~FSAR Section 6.2.3~~ UFSAR Table 15.6-9

(6) FSAR Page 5.1.2-28

(7) North-American-Rockwell Report 550-x-32, Autonetics Reliability Handbook, February 1963.

(8) FSAR Page 5.1-28