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 JOHNSON, A.R. Project Directorate I-3

See ltr.

SUBJECT: Forwards draft Safety Evaluation SEV-1019, Rev A,
 "Containment Structural Mods WBS 4" & draft Rev C to
 DC-10034A, Design Criteria Ginna Station Containment
 Structural Mods WBS 4."

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ROBERT C. MECREDY
Vice President
Nuclear Operations

November 1, 1994

U.S. Nuclear Regulatory Commission
Document Control Desk
Attn: Allen R. Johnson
Project Directorate I-3
Washington, D.C. 20555

Subject: Draft Safety Evaluation for Steam Generator Replacement
Project Containment Structural Modifications
R.E. Ginna Nuclear Power Plant
Docket No. 50-244

Dear Mr. Johnson:

As a result of the Steam Generator Replacement Project at Ginna Station, Rochester Gas and Electric is in the process of completing several safety evaluations to ensure that any modifications required to plant systems, structures or components do not result in any unreviewed safety questions. We provided a tentative schedule for completion of all safety evaluations during our October 5, 1994 presentation at NRR offices.

Enclosed are draft copies of the design criteria and safety evaluation for the structural modifications to the Reactor Containment Building. These documents are preliminary yet representative of the type of reviews being done for all aspects of this project to ensure that modifications prepared under this project can be performed under the principles of 10CFR50.59.

Very truly yours,

Robert C. Mecredy

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Attachment

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SAFETY EVALUATION

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TITLE:

CONTAINMENT STRUCTURAL MODIFICATIONS
WBS 4

Prepared by:

M. A. Sm...e
Preparer/Bechtel

3/30/94
Date

Reviewed by:

Mechanical/Nuclear Engineer/Bechtel

Date

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3-30-94
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Engineer, Nuclear Safety & Licensing

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Manager, Nuclear Safety & Licensing

Date

Approved by:

Chairman,
Plant Operations Review Committee

Date

☐ NRC Approval
Required Prior to Use

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For Design Verification Only:

This document contains requirements, which have not been fully verified, that must be satisfied and approved prior to completion of the Design Verification.

Yes/No List Sections:

FOR APPROVAL BY

APR 20 1994

RG&E

Engineering
Procedures
Manual

Containment Structural Modifications
WBS 4

SEV¹⁰¹⁹10034A-NH
Revision A
Page 2 of 42

REVISION CONTROL

Revision
Number

Affected
Sections

Description of Revision

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| 1. Containment | 4. Containment Spray |
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| 3. S/G Supports | 6. Containment Internal Structures |

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- None -

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- None -



SAFETY EVALUATION

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INTRODUCTION

Bechtel's engineering and construction activities associated with the steam generator replacement project are divided into various Work Breakdown Structures (WBSs) or groups:

WBS 1	Project Management
WBS 2	Construction Management
WBS 3	Facilities Outside Containment
WBS 4	Containment Structural Modifications
WBS 5	Steam Generator Rigging & Handling
WBS 6	Steam Generator Vessel
WBS 7	Steam Generator Piping
WBS 8	Insulation
WBS 9	Mockup & Training
WBS 10	Temporary Utilities & Services
WBS 11	Testing & Inspection
WBS 12	Temporary Shielding

The purpose of this document is to evaluate the safety concerns associated with Work Breakdown Structure (WBS) Group 4, "Containment Structural Modifications." The WBS group, and subsequently this document, is divided into general categories. This safety evaluation has been divided such that each of the categories has been addressed in its entirety, independent of the other categories. The safety evaluation is formatted as follows:

SECTIONCATEGORY

1.0	Containment Construction Openings
2.0	Temporary Enclosures and Laydown Area
3.0	Permanent Steam Generator Supports
4.0	Steam Generator Lower Support Temporary Restraints
5.0	Reactor Cavity Decking
6.0	Temporary Spent Fuel Pool Protection
7.0	Interfering Commodities
8.0	Temporary Equipment Hatch Platform

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Safety Evaluation

Section 1.0 CONTAINMENT CONSTRUCTION OPENINGS

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1.1 Description of Proposed Changes or Activities

1.1.1 This section of the safety evaluation evaluates the design and analysis of the containment dome reinforced concrete and liner plate during and after the steam generator replacement (SGR). It also addresses the requirements of the structural steel frames or "strongbacks" that will be used to support and remove the concrete sections.

Rigging and handling of heavy loads, including the steam generators and concrete sections, is addressed in the Safety Evaluation for WBS 5, Steam Generator Rigging and Handling.

1.1.2 The following is a description of the planned construction sequence to remove and re-install the concrete sections in the containment dome:

1.1.2.1 To facilitate the removal and replacement of the steam generators, two construction openings will be cut in the containment vessel dome. The construction opening for steam generator A is located directly over the steam generator. The construction opening for steam generator B consists of a slotted opening originating above the steam generator to a larger opening located toward the northeast (Reference 1.2.12).

1.1.2.2 Prior to shutdown for the steam generator replacement (SGR) outage with the plant in an Operating Mode, the following construction activities will be accomplished:

- Temporary enclosure structures will be installed over the area where each opening will be located and access walkways, work platforms, and a laydown area will be erected on the dome.
- Structural steel frames or "strongbacks" will be installed over the area where each opening will be located to support the concrete sections.
- Concrete cutting/chipping operations will commence. Concrete will be removed down to one-inch above the top of the first layer of reinforcing bar.

1.1.2.3 With the plant in a Cold Shutdown or Refueling Condition, with fuel in the reactor vessel and/or in the process of being offloaded to the spent fuel pool, the following construction activities will be accomplished:

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Concrete cutting/chipping will continue and will be completed down to the top of the liner plate. During this plant condition, the liner plate will not be breached and its leaktight integrity will be maintained.

- All 3 layers of reinforcing bar will be cut.
- The strongbacks will support the cut sections of concrete.
- Interfering commodities on the inside of the dome will be temporarily removed (containment spray piping, HVAC ductwork, and painter's trolley rails).

1.1.2.4 With the plant in a "no-mode" condition with all fuel offloaded to the spent fuel pool, the reactor cavity drained, and all necessary isolation of the spent fuel pool and supporting containment systems achieved, the following construction activities will be accomplished:

- Concrete cutting/chipping may still be on-going. Once completed, the liner plate will be cut and the concrete sections with the liner plate attached will be removed by rigging onto the strongback.
- The old steam generators will be removed and the new steam generators will be installed.
- New liner plate will be rigged into place, welded, and leak-tested.
- The interfering commodities on the inside of the dome will be reinstalled and tested as appropriate.
- The majority of reinforcing bars will be installed and cadwelded.

1.1.2.5 With the plant returned to a Refueling or Cold Shutdown Condition, with fuel in the reactor vessel and/or in the process of being onloaded from the spent fuel pool, the following construction activities will be accomplished:

- The final pieces of reinforcing bar will be set and cadwelded.
- All concrete will be placed/poured and cured. Strength tests will be conducted and acceptable results will be achieved.



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A limited containment structural integrity test (SIT) will be conducted and, based on acceptable test results, full containment integrity will be proven.

1.1.2.6 With the plant returned to an Operating Condition, the following construction activities will be accomplished:

- The temporary dome enclosures will be removed.
- The temporary access walkways, work platforms, and laydown area will be removed.

1.2 Documents Reviewed

- 1.2.1 RG&E Ginna Station Quality Assurance Manual.
- 1.2.2 Ginna Station Updated Final Safety Analysis Report.
- 1.2.3 R. E. Ginna Nuclear Power Plant Steam Generator Replacement Project - Containment Opening Report, July 1993, Bechtel.
- 1.2.4 Rochester Gas and Electric, Ginna Station - Unit No. 1, Containment Vessel Analysis Calculation.
- 1.2.5 Rochester Gas and Electric, Ginna Station - Unit No. 1, Containment Building Analysis Calculation.
- 1.2.6 USAS N6.2 - 1965, Safety Standard for Design, Fabrication, and Maintenance of Steel Containment Structures for Stationary Nuclear Power Reactors.
- 1.2.7 Special Processes Manual, Ginna Nuclear Power Plant Steam Generator Replacement Project, Bechtel Job No. 22225.
- 1.2.8 Ginna Technical Specifications and Bases
- 1.2.9 Bechtel Calculations, 22225-C-0402-01 through 0402-13, Containment Structural Analyses.
- 1.2.10 Bechtel Calculation, 22225-C-0504-01, Steam Generator Load Drop Analysis.
- 1.2.11 Design Criteria Document 10034A, Containment Structural Modifications, EWR 10034.
- 1.3 Structures, Systems, and Components Affected
 - 1.3.1 Concrete Containment Structure
 - 1.3.2 Steel Containment Liner Plate



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1.4 Safety and Safety-Significant Functions of Affected SSCs

1.4.1 The containment structure is a safety-related, seismic Category I structure which must perform the following functions:

- Allow the normal or emergency passage of fluids through the containment boundary while preserving the ability of the boundary to prevent or limit the escape of fission products to the environment that may result from postulated accidents.
- Sustain without undue risk to the health and safety of the public the initial effects of gross equipment failures, such as a large reactor coolant pipe break, without loss of required integrity.
- Retain for as long as the situation requires the functional capability of the containment to the extent necessary to avoid undue risk to the health and safety of the public.

1.4.2 The containment liner plate provides a leaktight barrier for the containment vessel. The liner plate is an integral part of the containment structural system.

1.5 Effects on Safety

1.5.1 Safety Classification

The containment structure is a seismic category I, safety-related structure. All permanent modifications performed to the containment structure in accordance with Design Criteria Document 10034A will satisfy the current design requirements to ensure no adverse impact on the containment structure. Therefore, there is no impact or change to the current safety classification of the affected structures.

Anchor bolts installed in the containment dome or intermediate building concrete are classified as non-safety, non-seismic. The process of installing and removing anchor bolts is classified as safety related. Grout used to repair seismic Category I concrete surfaces is classified as safety related.

1.5.2 Functional Impact

To facilitate construction of the containment openings, various construction loads (i.e., temporary enclosures, concrete cutting equipment, staged equipment, etc) will be applied to the containment structure. The resulting loading conditions during the applicable operating modes have been identified in Design Criteria 10034A and have been evaluated in Reference 1.2.9 and

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determined to have no adverse impact on the capability of the containment structure to perform its intended functions.

Construction activities associated with containment dome openings will employ various means for concrete and reinforcement removal such as wire saws, core bores, expansive grout, high speed circular saws and manual concrete excavation using jackhammers. Administrative controls as well as physical limitations associated with the components utilized during removal (e.g., diameter of saw blades, drill stops or depth gauges) will be employed to ensure that the reinforcing steel or the containment liner is not breached when clearing the containment openings if these components are still required to perform a safety function.

The containment structure has also been evaluated for the temporary containment opening configuration to ensure no detrimental effect to the remaining structure as a result of the openings. This temporary configuration has been evaluated in Reference 1.2.9 and determined to impose no adverse loadings onto the structure and, therefore, has no adverse impact.


Restoration of the containment structure will be performed to satisfy the current design basis requirements and will be tested via a limited SIT to demonstrate the structural integrity of the containment. Once the steam generator replacement is complete and the containment openings have been restored, the structure will be capable of performing all safety functions.

Due to the unavailability of material, the material utilized to restore the containment dome has not been procured, in all cases, in accordance with the original material requirements. Where a material substitution has been required, a reconciliation back to the original code or standard has been performed to ensure that the replaced materials meet or exceed the original material requirements.

Upon completion of the containment modifications, all applicable design requirements will have been satisfied. Therefore, the containment dome will be capable of performing its required safety functions under all modes of plant operation.

1.5.3 Technical Specifications

- 1.5.3.1 Construction activities associated with Design Criteria 10034A have been carefully scheduled relative to the plant operating conditions to ensure continued compliance with the requirements of Technical Specification 3.6, Containment System, and 3.8, Refueling (Reference 1.2.8). As a result of these modifications, no technical specification changes or temporary modifications are required.



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DRAFTTechnical Specification 3.6

The objective of Technical Specification 3.6, Containment Systems, is to define the operating status of the reactor containment for plant operation and to include support systems required to be operable to mitigate postulated challenges to containment integrity. As specified in Technical Specification 3.6, containment integrity shall not be violated unless the reactor is in the cold shutdown condition.

As specified in Section 1.1.2 of this safety evaluation, activities associated with this WBS will be conducted prior to reaching cold shutdown. These activities include installation of temporary enclosures, work platforms and laydown areas on the containment dome, installation of the strongbacks and concrete cutting/chipping operations. Following steam generator replacement, with the plant in either the refueling or cold shutdown condition, final sections of reinforcing steel will be positioned, replacement concrete will be poured and cured, and a limited SIT may be conducted. With the plant returning to full power operation, destaging of material/components such as the temporary enclosures, work platforms, miscellaneous equipment and the laydown areas will be completed.

The majority of the above activities will not modify the containment structure and therefore, will have no adverse effect on containment integrity prior to reaching the cold shutdown condition. Concrete cutting/chipping activities which occur prior to achieving the cold shutdown condition will be controlled to ensure that only the concrete cover above the top layer of rebar is removed (Reference Section 1.5.2). Based on structural evaluations, Reference 1.2.9 has demonstrated that the ability of the containment structure to withstand design basis loadings has not been compromised with the concrete cover above the top layer of reinforcing removed. Once cold shutdown is achieved, removal of the rebar and the remaining concrete down to the liner plate will occur. In the cold shutdown condition, no steam will be formed and there would be no pressure buildup in the containment if the reactor coolant system were to rupture (Reference the Basis for Technical Specification 3.6). Breaching of the containment dome liner will not occur until the plant has been defueled and all fuel safely stored within the spent fuel.

Thus, the activities performed prior to reaching the cold shutdown condition, or while in the cold shutdown condition, will not violate the containment system integrity, and will have no impact on the capability of the containment system to perform its design basis function.



DRAFTTechnical Specification 3.8

The objective of Technical Specification 3.8, Refueling, is to ensure that no incident could occur during refueling operations that would affect public health and safety (Reference 1.2.8). The equipment and components, including the containment liner, required to be operable to satisfy this technical specification ensure that postulated releases occurring during this condition are mitigated.

During the refueling condition, the containment leaktight barrier must be maintained. As such, the containment liner plate will not be breached until the reactor has been completely defueled and all fuel is safely stored within the spent fuel pool (Reference Section 1.5.2). As specified in the basis for Technical Specification 3.6, once the plant has achieved cold shutdown, no steam would be formed and no pressure buildup would occur as a result of a postulated reactor coolant system rupture. Therefore, design basis pressure and temperature loadings within containment will not occur in this condition. Reference 1.2.9 has evaluated the loading conditions on the liner plate, with the concrete and reinforcing steel removed, and has determined that the liner is capable of withstanding the postulated loadings imposed during refueling activities, to include mid-loop operations.

Thus, so long as the leaktight barrier is maintained in the refueling condition, the basis of Technical Specification 3.8 will be satisfied and there will be no adverse impact to the health and safety of the public as a result of the containment modifications.

No-Mode Condition

Once the reactor is completely defueled and all fuel safely stored in the spent fuel pool, containment integrity is no longer required. As such, the activities associated with the containment construction openings, performed during the no-mode condition, will have no affect on the existing technical specifications.

1.5.4 Updated Final Safety Analysis Report

- 1.5.4.1** UFSAR Section 3.8, Containment Structures, has been reviewed in the development of this safety evaluation. All permanent modifications to the containment structure, to include the liner plate, will be performed to satisfy the current design basis. Temporary modifications, such as installation of work platforms, laydown areas, temporary enclosures and strongbacks, have no permanent impact on the containment structure. As such, there is no effect on the applicable description or analyses of the

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concrete containment vessel or the steel containment liner plate presented in this section.

1.5.5 Regulatory Commitments

1.5.5.1 This activity does not result in a change to any existing regulatory commitments. Use of later editions of codes or standards may have been required in accomplishment of the activities associated with the containment construction openings. When use of later codes or standards was required, these codes or standards were reviewed to ensure that the requirements specified in the newer versions of the codes or standards are consistent with previous regulatory commitments.

1.5.6 Fire Protection Program

1.5.6.1 The containment modifications addressed in this safety evaluation have been evaluated for Appendix R conformance in accordance with EP-3-P-132 (QE326).

1.5.7 Internal/External Hazards

1.5.7.1 During the Power Operation, Hot Shutdown, Cold Shutdown, and Refueling modes of operation, the containment vessel dome and liner are classified as safety related, seismic Category I structures.

1.5.7.2 During the "no-mode" phase of operation with all fuel offloaded from the reactor vessel, the reactor cavity drained, and all necessary isolation of the spent fuel pool and supporting containment systems achieved, the containment vessel and liner no longer performs a safety related function.

1.5.7.3 All activities associated with the physical removal and reinstallation of the containment dome concrete, reinforcing bar, and liner plate are classified as safety related to ensure there are no adverse impacts on the adjacent sections of the containment dome and that the restored containment dome satisfies all applicable engineering and construction requirements.

1.5.7.4 To ensure that the concrete plugs do not fall and impact fuel or safe shutdown components during a postulated seismic event, the strongbacks are designed and classified as safety significant, seismic Category II/I structures.

1.5.7.5 Anchor bolts installed in the containment dome concrete are classified as safety significant, seismic Category II/I. The process of installing and removing anchor bolts is classified as safety related. The grout used to repair the dome concrete surface is classified as safety related. These classifications ensure that the safety-related function of the containment

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structure will not be adversely affected as a result of this modification.

- 1.5.7.6 Rigging and handling of heavy loads, including the steam generators and concrete sections, is addressed in the Safety Evaluation for WBS 5, Steam Generator Rigging and Handling.
- 1.5.7.7 The modifications to the containment structure will be performed within the bounds of the existing technical specifications and will conform to the current design basis. As such, there will be adverse effect on the containment structure to withstand previously evaluated internal or external hazards.
- 1.5.8 **Security and Emergency Plans**
 - 1.5.8.1 There will no impact on the Security Plan or the Emergency Plan as a result of this activity.
- 1.5.9 **Accidents and Transients**
 - 1.5.9.1 Accidents and transients of concern during performance of the containment structural modifications are those occurrences which result in a pressurization of containment or which could result in a release of radioactivity. Performance of the activities associated with the containment construction openings have been evaluated to ensure that the containment structure is not placed in a configuration which would jeopardize the capability of the structure to perform its design basis function (Reference Section 1.5.3). Following the restoration of containment, the structure will be returned to its pre-steam generator replacement configuration. Containment functional performance will be demonstrated by implementation of the limited structural integrity test.

Rigging and handling of heavy loads, including the steam generators and concrete sections, is addressed in the Safety Evaluation for WBS 5, Steam Generator Rigging and Handling.

The activities associated with the containment construction openings will not change the frequency categories or previously reviewed and approved accident and transient analyses, as presented in the UFSAR. All activities will be conducted outside containment and will have no effect on the accident and transient initiators described in the UFSAR.

- 1.6 **Unreviewed Safety Question Basis**
 - 1.6.1 Will the probability of occurrence or the consequences of an accident or malfunction of equipment important to safety previously evaluated in the UFSAR be increased?

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Until the plant is in cold shutdown, the activities that may commence are those that will have no impact on the structural capacity of the containment structure. Concrete cutting/chipping will only remove the concrete cover and will not impact the ability of the containment to withstand design basis loading conditions. Removal of the reinforcing steel and concrete down to the liner plate during cold shutdown or refueling will not adversely impact previously reviewed accidents or malfunctions since the liner's leaktight barrier will be maintained in all occurrences where a radioactive release may occur. The installation of anchor bolts to support the temporary enclosures and to attach the "strongbacks" will be controlled so as not to impact structurally significant reinforcing bar. Limited concrete cutting/chipping operations will commence, but will not allow concrete removal beyond the first layer of reinforcing bar.

The plant will be in cold shutdown and the primary coolant system depressurized before structurally significant concrete and reinforcing bar can be cut/chipped. The strongbacks will be fully installed and designed such that they support the concrete sections being removed (Reference 1.2.13). The load associated with the weight of these concrete sections will be transferred to the area of the containment dome surrounding the construction opening. Analysis has shown that the containment has sufficient capacity to support the load (Reference 1.2.9). To ensure that the concrete plugs do not fall and impact fuel during a postulated seismic event, the strongbacks are designed and classified as safety significant, seismic Category II/I structures. As noted above, the containment has been analyzed to ensure that it will continue to provide sufficient structural support after the concrete plugs have been removed to form the construction openings (Reference 1.2.9).

Refueling of the reactor will not commence until the containment liner has been restored and local leak tests performed. The plant will not enter hot shutdown condition until the containment dome is completely restored and the limited SIT performed.

Thus, there is no increase in the probability of occurrence or the consequences of an accident or malfunction of equipment important to safety previously evaluated in the UFSAR.

- 1.6.2 Will the possibility for an accident or malfunction of a different type than any previously evaluated in the UFSAR be created?

The size and location of the containment openings have been selected based on Reference 1.2.10 and the WBS 5.0 safety evaluation to preclude any adverse impact on the spent fuel pool as a result of a heavy load drop.



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The plant will be in cold shutdown and the primary coolant system depressurized before structurally significant concrete and reinforcing bar can be cut/chipped.

The containment liner plate will be breached only when the refueling activities are complete and all fuel safely stored within the spent fuel pool.

The containment dome has been analyzed for all applicable loading configurations associated with the containment construction openings, to include the loading associated with the addition of temporary structures and equipment onto the dome, and has been demonstrated to be capable of performing its required functions under all modes of plant operation during which activities are conducted.

Based on the above, this activity will not create the possibility for an accident or malfunction of a different type than any previously evaluated in the UFSAR.

1.6.3

Will the margin of safety as defined in the basis for any Technical Specification be reduced?

As discussed in Section 1.5.3, the containment construction openings do not involve a change to any technical specification as defined in Sections 3.6 or 3.8 of the Ginna Technical Specifications. This activity has been reviewed against the design description presented in Section 5.2.1 of the Technical Specifications and has been determined to not impact this description.

The design bases and performance criteria of safety related equipment has been shown to remain consistent with the approved safety analyses.

The temporary configuration of the containment openings to include the additional loadings imposed by the structures and equipment utilized to construct the opening have been evaluated and determined to have no adverse impact on the structural capability of the containment.

All specifications associated with Technical Specifications 3.6 and 3.8 have been reviewed and determined to not be impacted by implementation of the construction openings in the plant modes assumed in this safety evaluation.

Therefore, the margin of safety as defined in the Bases section of the Technical Specifications 3.6 and 3.8 will not be reduced.

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1.7

Conclusion

As a result of the evaluation performed above regarding the containment construction opening, the following conclusions have been made:

- This activity does not involve an unreviewed safety question.
- A Technical Specification Change is not required.
- A Fire Protection Program change is not required.
- An UFSAR change is not required.
- A change to the Emergency Plan or Security Plan is not required
- A regulatory commitment change is not required.

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DRAFT**Section 2.0 TEMPORARY ENCLOSURES AND LAYDOWN PLATFORM****2.1 Description of Proposed Changes or Activities**

To provide weather protection and help in containing the waste from the concrete removal operation and other construction activities, temporary enclosures will be erected over the dome openings. Temporary access walkways and work platforms will also be erected in the dome area. The temporary enclosures, access walkways, work platforms, and laydown structure will be attached to the containment dome, intermediate building roof, and/or the facade structure.

The temporary access walkways and work platforms will facilitate the construction activities and will provide a safe means of worker access to the dome openings. These temporary structures will be erected prior to plant shutdown and will not be removed until after the plant has returned to operation following replacement of the steam generators. In addition, a temporary equipment and material laydown area or platform will be installed on top of the dome. It also will be erected prior to plant shutdown and removed after startup.

Movement of heavy loads associated with the installation and removal of these temporary structures is addressed in the Safety Evaluation for WBS 5, Steam Generator Rigging and Handling.

2.2 Documents Reviewed

- 2.2.1 RG&E Ginna Station Quality Assurance Manual.
- 2.2.2 Ginna Station Updated Final Safety Analysis Report (UFSAR).
- 2.2.3 Ginna Technical Specifications and Bases.
- 2.2.4 Bechtel Calculations 22225-C-0402-01 through 0402-13, Containment Structural Analyses.
- 2.2.5 Design Criteria Document 10034A, Containment Structural Modifications, EWR 10034.

2.3 Structures, Systems, and Components Affected

- 2.3.1 Concrete Containment Vessel
- 2.3.2 Intermediate Building
- 2.3.3 Containment Facade Structure



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2.4 Safety and Safety-Significant Functions of Affected SSCs

2.4.1 The containment vessel is a safety related, seismic Category I structure which must perform the following functions:

- Allow the normal or emergency passage of fluids through the containment boundary while preserving the ability of the boundary to prevent or limit the escape of fission products to the environment that may result from postulated accidents.
- Sustain without undue risk to the health and safety of the public the initial effects of gross equipment failures, such as a large reactor coolant pipe break, without loss of required integrity.
- Retain for as long as the situation requires the functional capability of the containment to the extent necessary to avoid undue risk to the health and safety of the public.

2.4.2 The intermediate building is classified as a safety related, seismic Category I structure and houses safety related components.

2.4.3 The facade structure, a cosmetic rectangular structure that encloses the containment, is classified as a safety related, seismic Category I structure.

2.5 Effects on Safety

2.5.1 Safety Classification

The temporary enclosures, access walkways, work platforms, and laydown platform are classified as non-safety, non-seismic structures.

Anchor bolts installed in the containment dome or intermediate building concrete are classified as non-safety, non-seismic. The process of installing and removing anchor bolts is classified as safety-related. Grout used to repair seismic Category I concrete surfaces is classified as safety related.

All connections to the facade/intermediate structures are classified as safety related.

The containment structure, intermediate building, and facade structure have been evaluated and determined to be capable of performing their required functions under the applicable modes of plant operation during which time the temporary enclosures and laydown areas are in place (Reference Bechtel Calculation 22225-



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C-XXXX-XX). Therefore, there is no impact or change to the current safety classification of the affected structures.

2.5.2 Functional Impact

The containment dome, intermediate building roof, and facade have been evaluated for the additional loadings imposed by the temporary structures. These evaluations demonstrate the adequacy of the affected safety related structures with the additional loadings imposed by the temporary structures and take into account the design basis loading configurations which may be present during the time period that the temporary structures are in place (Reference Bechtel Calculation 22225-C-XXXX-XX).

Design basis tornado missile impacts are evaluated in UFSAR Section 3.5.2.1 and RG&E Calculation XXXX. Based on a review of these references, it is concluded that the impact energy associated with a design basis tornado missile is more severe than the resulting impact energy on adjacent safety-related structures, systems, or components which could occur from a failure of the temporary structures due to a design basis tornado or seismic event. Consequently, the temporary enclosures, access walkways, work platforms, and laydown platform are classified as non-safety related, non-seismic structures and they will not be designed to withstand the design basis tornado wind speed of 132 mph.

2.5.3 Technical Specifications

This activity will not affect compliance with the requirements of the Technical Specifications nor will these activities require a change to the Technical Specifications. Containment integrity, Technical Specification 3.6, will not be affected during performance of activities associated with installation of the temporary structures since breaching of the containment boundary is not required to accomplish these activities.

2.5.4 Updated Final Safety Analysis Report

There is no effect on the applicable descriptions or analyses associated with the concrete containment vessel, the intermediate building, or the facade structure. All modifications associated with the temporary structures are, by definition, temporary in nature and will be removed upon completion of the steam generator replacement. No UFSAR changes are required as a result of these temporary structures.

2.5.5 Regulatory Commitments

This activity does not result in a change to any existing regulatory commitments. The current design basis will be

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maintained following the modifications associated with the temporary structures.

2.5.6 Fire Protection Program

2.5.6.1 The containment modifications addressed in this safety evaluation have been evaluated for Appendix R conformance in accordance with EP-3-P-132 (QE326).

2.5.7 Internal/External Hazards

2.5.7.1 The temporary enclosures, access walkways, work platforms, and laydown structure will be attached to the containment dome, intermediate building roof, or the facade structure. The containment dome, intermediate building, and facade are classified as safety related, seismic Category I structures.

2.5.7.2 Design basis tornado missile impacts are evaluated in UFSAR Section 3.5.2.1 and RG&E Calculation XXXX. Based on a review of these references, it is concluded that the impact energy associated with a design basis tornado missile is more severe than the resulting impact energy on adjacent safety-related structures, systems, or components which could occur from a failure of the temporary structures due to a design basis tornado or seismic event. Consequently, the temporary enclosures, access walkways, work platforms, and laydown platform are classified as non-safety related, non-seismic structures and they will not be designed to withstand the design basis tornado wind speed of 132 mph.

2.5.8 Security and Emergency Plans

This modification has no impact on the Security Plan or the Emergency Plan. No security barriers are breached.

2.5.9 Accidents and Transients

Activities associated with installation of the temporary structures associated with the containment openings are accomplished outside the containment and have no adverse impact on safety related structures. As these structures are external to the safety related structures, the accidents or transients evaluated in the UFSAR are not affected. Failure of the structures as a result of a design basis earthquake or seismic event have been evaluated and the consequences demonstrated to be no more severe than the design basis tornado missile impact.

Restoration of the containment dome, intermediate building, and/or facade structure following removal of the temporary structures will not modify the load carrying characteristics of these structures. These structures will be restored to their

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original structural capacity. All operating design conditions shall remain unchanged. Therefore, temporary modification and subsequent restoration of these structures will not adversely affect the frequency, severity, or analysis of previously evaluated accidents, transients, or special events.

2.6 Unreviewed Safety Question Basis

2.6.1 Will the probability of occurrence or the consequences of an accident or malfunction of equipment important to safety previously evaluated in the UFSAR be increased?

The temporary enclosures, access walkways, work platforms, and laydown platform are classified as non-safety, non-seismic and perform no safety function. These structures have been evaluated to ensure that, in the event of a failure due to design basis seismic or tornado event, the consequences of failure are no worse than the design basis tornado missile impact.

The containment dome, intermediate building roof, and facade have been evaluated for the additional loading configurations of the temporary structures and determined to be within the allowable loadings.

Based on the above, there is no increase in the probability of occurrence or the consequences of an accident or malfunction of equipment important to safety previously evaluated in the UFSAR.

2.6.2 Will the possibility for an accident or malfunction of a different type than any previously evaluated in the UFSAR be created?

Design basis tornado missile impacts are evaluated in UFSAR Section 3.5.2.1 and RG&E Calculation XXXX. Based on a review of these references, it is concluded that the impact energy associated with a design basis tornado missile is more severe than the resulting impact energy on adjacent safety-related structures, systems, or components which could occur from a failure of the temporary structures due to a design basis tornado or seismic event. Consequently, the temporary enclosures, access walkways, work platforms, and laydown platform are classified as non-safety related, non-seismic structures and they will not be designed to withstand the design basis tornado wind speed of 132 mph.

Based on the above, this activity will not create the possibility for an accident or malfunction of a different type than any previously evaluated in the UFSAR.

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- 2.6.3 Will the margin of safety as defined in the basis for any Technical Specification be reduced?

The permanent plant structures will not be modified as a result of the installation of the temporary structures. Containment integrity, as defined in Technical Specification 3.8, is not affected by this modification. Restoration will not modify the load carrying characteristics of any of these structures. All operating design conditions will remain unchanged. Therefore, the containment dome, intermediate building, and facade structure will continue to be capable of performing their required safety-related functions.

Therefore, the margin of safety as defined in the Bases section of the Technical Specifications will not be reduced.

2.7 Conclusion

As a result of the evaluation performed above regarding the temporary enclosures and laydown platform, the following conclusions have been made:

- This activity does not involve an unreviewed safety question.
- A Technical Specification Change is not required.
- A Fire Protection Program change is not required.
- An UFSAR change is not required.
- A change to the Emergency Plan or Security Plan is not required
- A regulatory commitment change is not required.

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DRAFT**Section 3.0****PERMANENT STEAM GENERATOR SUPPORTS****3.1 Description of Proposed Changes or Activities**

The method for disconnection of the old steam generators and reinstallation of the new steam generators is addressed in Design Criteria 10034A and basically includes:

- Lock lower support columns in place with temporary structural restraints
- Disconnect the old steam generators from the upper support (ring) snubbers/struts and lower support columns
- Install the new steam generators, replacement upper supports (rings), and lower support components
- Connect the new steam generators to the support structures, including all shimming necessary to achieve RCS piping fitup.

3.2 Documents Reviewed

- 3.2.1 RG&E Ginna Station Quality Assurance Manual.
- 3.2.2 Ginna Station Updated Final Safety Analysis Report (UFSAR).
- 3.2.3 Ginna Technical Specifications and Bases.
- 3.2.4 Design Criteria Document 10034A, Containment Structural Modifications, EWR 10034.

3.3 Structures, Systems, and Components Affected**3.3.1 Steam Generator Support System****3.4 Safety and Safety-Significant Functions of Affected SSCs**

- 3.4.1 The steam generator supports are safety related, seismic Category I components designed to provide adequate support and stability to the steam generators and the attached reactor coolant piping during all modes of reactor operation.

3.5 Effects on Safety**3.5.1 Safety Classification**

New upper supports (rings) and lower steam generator support components will be fabricated and installed in accordance with the current design requirements. All activities associated with disconnection and reconnection of the steam generator supports

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are classified as safety related. Therefore, there is no impact on the existing safety classifications for these components.

3.5.2 Functional Impact

The steam generator supports are classified as safety related, seismic Category I structures.

The new upper supports (rings) and lower steam generator support components will be fabricated and installed in accordance with the current design basis to ensure that functionality of the components is not altered.

Thus, the disconnection of the steam generator supports and the replacement of steam generator support components will have no adverse impact to the functional performance of the steam generator support system.

3.5.3 Technical Specifications

Activities associated with the steam generator supports will not be performed until the steam generators and supports have been declared inoperable. Thus, compliance with the existing Technical Specifications will be ensured. No change to the Technical Specifications are required as a result of this modification.

3.5.4 Updated Final Safety Analysis Report

There is no effect on the applicable UFSAR descriptions or analyses associated with the steam generator upper supports (rings) or the lower support columns. All components will be reinstalled to satisfy the design requirements specified in the UFSAR.

3.5.5 Regulatory Commitments

This activity does not result in a change to any existing regulatory commitments.

3.5.6 Fire Protection Program

The support modifications addressed in this safety evaluation have been evaluated for Appendix R conformance in accordance with EP-3-P-132 (QE326).

3.5.7 Internal/External Hazards

New upper supports (rings) and lower steam generator support components will be fabricated and installed in accordance with

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the original design. Upon reinstallation, the lower support will satisfy the current design bases will be made.

3.5.8 Security and Emergency Plans

There will be no impact to the Security Plan or the Emergency Plan as a result of this activity.

3.5.9 Accidents and Transients

New upper supports (rings) and lower steam generator support components will be fabricated and installed in accordance with the original design. Therefore, removal and replacement of the SG supports will not affect the frequency, severity, or analysis of previously evaluated accidents or transients.

Removal/replacement of the upper and lower steam generator supports will only occur after these components have been declared inoperable.

3.6 Unreviewed Safety Question Basis

3.6.1 Will the probability of occurrence or the consequences of an accident or malfunction of equipment important to safety previously evaluated in the UFSAR be increased?

New upper supports (rings) and lower steam generator support components will be fabricated and installed in accordance with the current design.

Based on the above, there is no increase in the probability of occurrence or the consequences of an accident or malfunction of equipment important to safety previously evaluated in the UFSAR.

3.6.2 Will the possibility for an accident or malfunction of a different type than any previously evaluated in the UFSAR be created?

Based on the like-for-like replacement, this activity will not create the possibility for an accident or malfunction of a different type than any previously evaluated in the UFSAR.

3.6.3 Will the margin of safety as defined in the basis for any Technical Specification be reduced?

Based on the like-for-like replacement, the margin of safety as defined in the Bases section of the Technical Specifications will not be reduced.

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3.7

Conclusion

As a result of the evaluation performed above regarding the permanent steam generator supports, the following conclusions have been made:

- This activity does not involve an unreviewed safety question.
- A Technical Specification Change is not required.
- A Fire Protection Program change is not required.
- An UFSAR change is not required.
- A change to the Emergency Plan or Security Plan is not required
- A regulatory commitment change is not required.

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Section 4.0 STEAM GENERATOR LOWER SUPPORT TEMPORARY RESTRAINTS

4.1 Description of Proposed Changes or Activities

The steam generator lower supports are pinned columns which will require stabilization before being disconnected from the steam generators. The following is a description of the planned activities:

- During an outage prior to the steam generator replacement (SGR) outage, brackets will be installed (bolted) on the support columns.
- Early during the SGR outage, these column brackets will be used to connect temporary structural bracing to the columns. The stabilizing braces may be installed during defueling but the bracing will not be rigidly connected to the column brackets until all fuel has been removed from the reactor and the reactor cavity drained. The lower support columns will, however, be rigidly connected using the temporary bracing before the RCS piping is cut.
- The temporary bracing will be loosened after all RCS pipe welding is completed and before fuel reload.
- The temporary bracing and column brackets will be completely disconnected from the steam generator support columns prior to entry in a mode above Cold Shutdown.

4.2 Documents Reviewed

- 4.2.1 RG&E Ginna Station Quality Assurance Manual.
- 4.2.2 Ginna Station Updated Final Safety Analysis Report (UFSAR).
- 4.2.3 Ginna Technical Specifications and Bases
- 4.2.4 Design Criteria Document 10034A, Containment Structural Modifications
- 4.2.5 Bechtel Calculation 22225-C-0504-XXX, Steam Generator Lower Support Temporary Restraint.

4.3 Structures, Systems, and Components Affected

4.3.1 Steam Generator Lower Supports

4.4 Safety and Safety-Significant Functions of Affected SSCs

- 4.4.1 The function of the steam generator lower supports is to provide support for the steam generators during all modes of reactor



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operation. These supports are safety related, seismic Category I components.

4.5 Effects on Safety

4.5.1 Safety Classification

The steam generator lower supports are classified as safety related, seismic Category I structures.

The column brackets installed during an outage prior to the SGR outage are classified as safety significant, seismic Category II/I components and will be analyzed to ensure they will not fail and adversely impact safety related equipment during a seismic event.

The temporary braces are classified as non-safety, non-seismic components and will only be fully installed after all fuel has been removed from the reactor vessel.

Therefore, there is no impact on the current safety classifications for the lower supports.

4.5.2 Functional Impact

The function of the steam generator lower supports is:

- To provide deadweight support of the steam generators during all modes of reactor operation
- To provide seismic support of the steam generators for both download and overturning
- To permit free thermal growth of the steam generator system during reactor operation.

The function of the lower support temporary restraints is to lock the lower steam generator support columns in place to facilitate installation of the new steam generators (Reference Bechtel Calculation 22225-C-XXXX-XX).

Installation of the assembly brackets and braces will not impair the structural capacity of the containment vessel or the steam generator support system, nor will it permanently affect the control of any existing systems, features or equipment. The additional weight of the bracket assemblies is insignificant when compared to the loadings applied to the steam generator lower support columns. Therefore, the attachment of the brackets to the steam generator support columns during plant operation will have an insignificant impact on the ability of the steam



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generator support columns to perform their designated safety functions.

Upon completion of the steam generator replacement outage, the steam generator lower support temporary restraint system will be disassembled and removed from the containment.

4.5.3 Technical Specifications

This activity will not affect the continued compliance with the requirements of the Technical Specifications 3.1, Reactor Coolant System. No change to the Technical Specifications is required as a result of the installation of the temporary restraints.

4.5.4 Updated Final Safety Analysis Report

There is no effect on the descriptions or analyses associated with the steam generator lower support columns (Reference UFSAR Section 3.9.3). The column brackets as well as the interconnecting structural members of the temporary restraint will not permanently modify the lower support structure. Therefore, no change to the UFSAR is required.

5.5 Regulatory Commitments

This activity does not result in a change to any existing regulatory commitments.

4.5.6 Fire Protection Program

The temporary restraints addressed in this safety evaluation have been evaluated for Appendix R conformance in accordance with EP-3-P-132 (QE326).

4.5.7 Internal/External Hazards

The brackets to be installed on the lower supports in an outage prior to the SGR outage shall be designed to remain in place during a Design Basis Earthquake to ensure they do not fail and impact safety related equipment.

The temporary bracing of the lower support columns will only be functional during the time that all fuel is removed from the reactor vessel. Consequently, postulated failures of the temporary bracing during the SGR outage will have no adverse safety impacts.

The temporary bracing will be loosened prior to fuel reload to ensure that the assumed design basis loading configurations with fuel in the reactor vessel are not invalidated.

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These modifications are temporary in nature and are performed inside containment. There will be no impact on the Security Plan or the Emergency Plan as a result of this activity.

4.5.9 Accidents and Transients

The column brackets to be installed during an outage prior to the SGR outage are classified as safety significant, seismic Category II/I and have been analyzed to ensure they will not fail and adversely impact safety related equipment during a seismic event (Reference 4.2.5).

The temporary bracing between the column brackets will only be fully installed after all fuel has been removed from the reactor vessel and will be detensioned prior to fuel onload. The temporary bracing and column brackets shall be disconnected from the support columns prior to entry in a mode above Cold Shutdown.

The sequence for installation of the column brackets and bracing will ensure that the steam generator lower supports will function as designed and that no failure modes have been introduced. Therefore, this activity will not affect the frequency, severity, or analysis of previously evaluated accidents or transients.

4.6 Unreviewed Safety Question Basis

- 4.6.1** Will the probability of occurrence or the consequences of an accident or malfunction of equipment important to safety previously evaluated in the UFSAR be increased?

The column brackets are classified as safety significant, seismic Category II/I and have been analyzed to ensure they will not fail and adversely impact safety related equipment during a seismic event. This design approach ensures that the installation of brackets will not adversely impact safety-related structures, systems or components. The brackets shall be completely removed and the lower support columns restored to their pre-steam generator replacement configuration prior to entry into a mode above Cold Shutdown.

During the steam generator replacement outage, the temporary restraint bracing will be fully installed/tensioned after all fuel has been removed from the reactor vessel and will be removed before fuel reload. This administrative control ensures that the steam generator lower supports will continue to satisfy all design basis loading configurations.

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Based on the above, there is no increase in the probability of occurrence or the consequences of an accident or malfunction of equipment important to safety previously evaluated in the UFSAR.

- 4.6.2 Will the possibility for an accident or malfunction of a different type than any previously evaluated in the UFSAR be created?

As discussed in 4.6.1 above, as a result of the administrative controls and design of the brackets to seismic II/I criteria, this activity will not create the possibility for an accident or malfunction of a different type than any previously evaluated in the UFSAR.

- 4.6.3 Will the margin of safety as defined in the basis for any Technical Specification be reduced?

The seismic design of the brackets combined with the limits imposed regarding the plant conditions under which final installation of the restraints can be performed ensures that the structural integrity of the reactor coolant system and all design basis loading configurations are maintained. Therefore, the margin of safety as defined in the Bases section of the Technical Specifications will not be reduced.

4.7 Conclusion

As a result of the evaluation performed above regarding the steam generator lower support temporary restraints, the following conclusions have been made:

- This activity does not involve an unreviewed safety question.
- A Technical Specification Change is not required.
- A Fire Protection Program change is not required.
- An UFSAR change is not required.
- A change to the Emergency Plan or Security Plan is not required
- A regulatory commitment change is not required.

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Section 5.0

REACTOR CAVITY DECKING

5.1 Description of Proposed Changes or Activities

To provide a general work and construction laydown area inside the containment, a portion of the reactor cavity will be temporarily covered with steel decking. This decking will be installed in pre-fabricated panels after all fuel is removed from the containment, the reactor cavity drained, and necessary isolation of the spent fuel pool and supporting containment systems is achieved. The reactor cavity decking shall be removed prior to fuel load.

Interferences to the installation, use, and removal of the reactor cavity decking are identified and evaluated in Section 7.0 of this Safety Evaluation.

5.2 Documents Reviewed

5.2.1 RG&E Ginna Station Quality Assurance Manual.

5.2.2 Ginna Station Updated Final Safety Analysis Report (UFSAR).

5.2.3 Ginna Technical Specifications and Bases

5.2.4 Design Criteria Document 10034A, Containment Structural Modifications, EWR 10034.

5.3 Structures, Systems, and Components Affected

5.3.1 Operating Floor Slab

5.4 Safety and Safety-Significant Functions of Affected SSCs

5.4.1 The function of the operating floor slab inside the containment is to provide structural support for equipment loads and to provide radiation shielding.

5.5 Effects on Safety

5.5.1 Safety Classification

The containment internal structures are classified as safety related, seismic Category I. The loads imposed by the reactor cavity decking have been analyzed (Reference 5.2.5) to ensure no adverse impact on permanent plant structures. Therefore, there is no impact on the current safety classifications.

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5.5.2 Functional Impact

The function of the concrete walls inside containment will not be impacted by the installation of the reactor cavity decking. Bechtel Calculation 22225-C-XXXX-XX has determined there is no adverse impact on permanent plant structures as a result of the temporary loads associated with the reactor cavity decking.

5.5.3 Technical Specifications

This activity will not affect the continued compliance with the requirements of the Technical Specifications. The reactor cavity decking will not be installed over the reactor cavity until the reactor is defueled and all fuel safely stored within the spent fuel pool.

5.5.4 Updated Final Safety Analysis Report

There is no effect on the applicable UFSAR descriptions or analyses associated with the containment internal structures. The reactor cavity decking is a temporary structure which will be completely removed prior to fuel reload.

5.5 Regulatory Commitments

This activity does not result in a change to any existing regulatory commitments. The reactor cavity decking is a temporary structure installed above the reactor cavity upon completion of fuel offload and will be completely removed prior to fuel reload.

5.5.6 Fire Protection Program

The reactor cavity decking addressed in this safety evaluation have been evaluated for Appendix R conformance in accordance with EP-3-P-132 (QE326).

5.5.7 Internal/External Hazards

The reactor cavity decking will be installed in pre-fabricated panels after all fuel is removed from the containment, the reactor cavity drained, and all necessary isolation of the spent fuel pool and supporting containment systems is achieved. The decking will be removed prior to fuel load. Consequently, postulated failures of the cavity decking will have no adverse impacts on plant safety.

5.5.8 Security and Emergency Plans

There will not be any impact on the Security Plan or the Emergency Plan as a result of this activity. This activity will

Figure 1. Schematic representation of the experimental design. The subjects were divided into two groups: the control group (CG) and the experimental group (EG). The CG was divided into two subgroups: the control group (CG) and the control group (CG). The EG was divided into two subgroups: the experimental group (EG) and the experimental group (EG). The CG was divided into two subgroups: the control group (CG) and the control group (CG). The EG was divided into two subgroups: the experimental group (EG) and the experimental group (EG).

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be performed within the containment and will be conducted in accordance with all applicable security requirements.

5.5.9 Accidents and Transients

The reactor cavity decking will be installed after fuel offload and will be removed prior to fuel reload. With the plant in the defueled condition, there are no previously analyzed accidents or transients which could be affected by installation of the decking. All safety related systems will be isolated from containment, once fuel offload has been accomplished, to minimize the impact of any construction incidents which may occur with the plant in the defueled condition. As such, there is not impact to existing accident or transient analyses as a result of the installation of the reactor cavity decking.

5.6 Unreviewed Safety Question Basis

5.6.1 Will the probability of occurrence or the consequences of an accident or malfunction of equipment important to safety previously evaluated in the UFSAR be increased?

The reactor cavity decking will be installed once the reactor vessel is completely defueled, all fuel safely stored within the spent fuel pool and all safety-related systems, required during the defueled condition, are isolated from containment. The cavity decking will be removed prior to fuel reload. With the plant in the defueled condition and essential safety-related systems isolated from containment, the impact of a construction incident is minimized.

Based on the above, there is no increase in the probability of occurrence or the consequences of an accident or malfunction of equipment important to safety previously evaluated in the UFSAR.

5.6.2 Will the possibility for an accident or malfunction of a different type than any previously evaluated in the UFSAR be created?

As discussed in 5.6.1 above, as a result of the analysis performed confirming no impact on permanent plant and the controls imposed regarding when decking may be installed/removed, this activity will not create the possibility for an accident or malfunction of a different type than any previously evaluated in the UFSAR.

5.6.3 Will the margin of safety as defined in the basis for any Technical Specification be reduced?

As discussed in 5.6.1 above, as a result of the analysis performed confirming no impact on permanent plant and the

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controls imposed regarding when the decking may be installed/removed, the margin of safety as defined in the Bases section of the Technical Specifications will not be reduced.

5.7 Conclusion

As a result of the evaluation performed above regarding the reactor cavity decking, the following conclusions have been made:

- This activity does not involve an unreviewed safety question.
- A Technical Specification Change is not required.
- A Fire Protection Program change is not required.
- An UFSAR change is not required.
- A change to the Emergency Plan or Security Plan is not required
- A regulatory commitment change is not required.



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Section 6.0

TEMPORARY SPENT FUEL POOL PROTECTION

6.1 Description of Proposed Changes or Activities

6.1.1 Based on the results of the steam generator load drop analysis and the evaluation of the consequences of a postulated drop of a steam generator or concrete section in the Safety Evaluation for WBS 5.0, "Steam Generator Rigging and Handling," temporary protection for the spent fuel pool and supporting systems may be required. This protection would ensure that the stored spent fuel could not be adversely affected from the collateral damage that may result from a postulated drop of a steam generator or concrete section.

Upon completion of the load drop analysis and the Safety Evaluation for WBS 5.0, design requirements for temporary protection of the spent fuel pool will be determined and the safety evaluation supporting the temporary spent fuel pool protection will be developed and included in this section.

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Section 7.0

INTERFERING COMMODITIES

7.1 Description of Proposed Changes or Activities

As described in Section 1.1 of this evaluation, to facilitate the removal and replacement of the steam generators, two openings will be made in the containment vessel dome, one opening over each steam generator. For these openings to be made, certain commodities must be temporarily removed from the inside surface of the containment dome as follows:

Sections of the containment spray ring piping and the associated supports will be severed and temporarily removed from the inside of the containment dome to allow a clear rigging path for steam generator removal.

One section of containment ventilation ducting will also be temporarily removed from the inside of the containment dome.

Sections of the painters trolley rail at El. 377'-10" will be temporarily removed at the opening over SG A and the opening over SG B.

Interferences with the reactor cavity decking, if any, will be identified during the April 1994 containment walkdown and will be addressed in this safety evaluation, as required.

All removed interferences will be reinstalled upon completion of the steam generator replacement to satisfy the current design requirements.

7.2 Documents Reviewed

- 7.2.1 RG&E Ginna Station Quality Assurance Manual.
- 7.2.2 Ginna Station Updated Final Safety Analysis Report (UFSAR).
- 7.2.3 Ginna Technical Specifications and Bases
- 7.2.4 Design Criteria Document, 10034A, Containment Structural Modifications, EWR 10034.

7.3 Structures, Systems, and Components Affected

- 7.3.1 Containment Spray System
- 7.3.2 Containment Recirculation and Cooling System
- 7.3.3 Painter's Trolley rails



7.4 Safety and Safety-Significant Functions of Affected SSCs

- 7.4.1 In conjunction with the containment cooling system and the emergency core cooling system, the containment spray system is designed to remove sufficient heat from the containment atmosphere following an accident condition to maintain the containment pressure below structural limits. This system is also capable of reducing the iodine and particulate fission product inventories released into the containment atmosphere by a loss of coolant accident.
- 7.4.2 The portion of the ventilation ducting being temporarily removed is designed to remove the normal heat loss from the equipment and piping in the reactor containment during plant operation and maintain a normal ambient temperature of about 120°F, 50% relative humidity. During periods of reactor shutdown, this system provides a minimum containment ambient temperature of 50°F. This system also provides sufficient air circulation and filtering throughout all containment areas to permit safe and continuous access to the reactor containment within two (2) hours after reactor shutdown.
- 7.4.3 The function of the painter's trolley rails is to provide a means of access to the inner containment dome. These trolley rails perform no safety function.

7.5 Effects on Safety

7.5.1 Safety Classification

The containment spray system and the containment recirculation and cooling system are classified as safety related, seismic Category I systems. The painter's trolley rails are classified as safety significant, seismic Category II/I. These systems will be restored to satisfy the current design basis upon completion of the steam generator replacement and will be verified to be operable prior to entering a plant mode where the systems may be required to function. Therefore, there is no impact on the current safety classifications.

7.5.2 Functional Impact

- 7.5.2.1 Removal of the containment spray piping and supports shall only be performed once the reactor has entered a Cold Shutdown condition. Reinstallation of the piping and supports in accordance with the current design requirements, including applicable system testing, shall be performed prior to entering a mode above Cold Shutdown. This ensures that the system is available during plant modes in which the spray system may be expected to perform its safety function.

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7.5.2.2 Removal of the containment HVAC ductwork shall only be performed once the reactor has entered Cold Shutdown. Reinstallation of the ductwork in accordance with the current design requirements, including the applicable system testing, shall be performed prior to entering a mode above Cold Shutdown. This control on the plant modes during which the system can be modified ensures that the system can perform its required function.

7.5.2.3 The painter's trolley rails perform no safety function and will be reinstalled to satisfy seismic II/I criteria. Removal of the trolley rails may occur after the plant has entered cold shutdown.

7.5.3 Technical Specifications

By not allowing modifications to the containment spray or containment ventilation systems to begin until after the plant reaches Cold Shutdown and not allowing the plant ascend above this mode until the spray or ventilation systems have been fully restored and tested, the requirements of Technical Specification 3.3.2 are satisfied.

Therefore, this activity will not affect the continued compliance with the requirements of the Technical Specifications nor will this activity require a change the existing technical specifications.

7.5.4 Updated Final Safety Analysis Report

There is no effect on the applicable UFSAR descriptions or analyses associated with the removal and reinstallation of interfering commodities. All interfering commodities will be reinstalled to satisfy the current design requirements.

7.5.5 Regulatory Commitments

This activity does not result in a change to any existing regulatory commitments. All interfering commodities will be reinstalled to satisfy the current design requirements.

7.5.6 Fire Protection Program

The reactor cavity decking addressed in this safety evaluation have been evaluated for Appendix R conformance in accordance with EP-3-P-132 (QE326).

7.5.7 Internal/External Hazards

The containment spray system and the containment ventilation system will be reinstalled in accordance with the current design requirements to ensure that safety related, seismic Category I



classification is not affected. This ensures that the piping and ventilation system continue to be capable of withstanding the internal hazards associated with the post accident containment environment. The trolley rail will be reinstalled seismic Category II/I to ensure no adverse impact to safety-related components. Since this activity is internal to the containment, external hazards are not applicable.

7.5.8 Security and Emergency Plans

There will not be any impact on the Security Plan or the Emergency Plan as a result of this activity. This activity will be conducted within containment in accordance with the applicable security requirements.

7.5.9 Accidents and Transients

The containment spray and containment ventilation systems are required to mitigate the consequences of a design basis loss of coolant accident. These interferences to steam generator rigging will be removed and re-installed during the steam generator replacement (SGR) outage. All removed interferences will be reinstalled to satisfy the current design bases to ensure that the affected equipment will not be adversely impacted and will continue to perform their design basis functions.

Therefore, this activity will not affect the frequency, severity, or analysis of previously evaluated accidents or transients.

7.6 Unreviewed Safety Question Basis

7.6.1 Will the probability of occurrence or the consequences of an accident or malfunction of equipment important to safety previously evaluated in the UFSAR be increased?

The interfering commodities will be removed and re-installed during the steam generator replacement (SGR) outage. The design bases of the affected equipment will not be altered. All of the affected equipment will be re-installed to satisfy the current design basis.

The containment spray and containment recirculation and cooling systems will not be removed until the plant has reached Cold Shutdown. With the plant in the cold shutdown condition, the design basis events for which the containment spray and containment ventilation systems are required to be operable will not occur. Thus, after reaching Cold Shutdown, the spray system and the containment ventilation system are no longer required to perform a safety function.



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Based on the above, there is no increase in the probability of occurrence or the consequences of an accident or malfunction of equipment important to safety previously evaluated in the UFSAR.

- 7.6.2 Will the possibility for an accident or malfunction of a different type than any previously evaluated in the UFSAR be created?

As discussed in 7.6.1 above, as a result of the controls imposed regarding when the interfering systems can be removed/reinstalled, and since the systems will be reinstalled in accordance with the current design requirements, this activity will not create the possibility for an accident or malfunction of a different type than any previously evaluated in the UFSAR.

- 7.6.3 Will the margin of safety as defined in the basis for any Technical Specification be reduced?

As discussed in 7.6.1 above, as a result of the controls imposed regarding when the interfering systems can be removed/reinstalled, the margin of safety as defined in the Bases section of the Technical Specifications will not be reduced. All requirements of Technical Specification Section 3.3.2 will be adhered to during the implementation of this modification.

7.7 Conclusion

As a result of the evaluation performed above regarding the interfering commodities, the following conclusions have been made:

- This activity does not involve an unreviewed safety question.
- A Technical Specification Change is not required.
- A Fire Protection Program change is not required.
- An UFSAR change is not required.
- A change to the Emergency Plan or Security Plan is not required
- A regulatory commitment change is not required.

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Section 8.0

TEMPORARY EQUIPMENT HATCH PLATFORM

8.1 Description of Proposed Changes or Activities

The temporary equipment hatch platform to be used for the movement of materials and equipment into and out of the containment during the steam generator replacement outage will be developed pending a review of the acceptability of using the existing reactor coolant pump transfer system.

The safety issues associated with the installation and use of a temporary equipment hatch platform during the steam generator replacement outage will be evaluated based on the determination noted above.

