December 11, 2003

Dr. Robert C. Mecredy
Vice President, Nuclear Operations
Rochester Gas and Electric Corporation
89 East Avenue
Rochester, New York 14649

SUBJECT: R. E. GINNA NUCLEAR POWER PLANT - NRC SPECIAL INSPECTION REPORT 05000244/2003012

Dear Dr. Mecredy:

On October 28, 2003, the U.S. Nuclear Regulatory Commission (NRC) completed a special inspection of a containment sump screen bypass issue at the R. E. Ginna Nuclear Power Plant. The enclosed report (Enclosure 1) documents the inspection findings, which were discussed with you and other members of your staff at an exit meeting held on October 28, 2003.

This inspection examined activities conducted under your license as they relate to safety and compliance with the Commission's rules and regulations and with the conditions of your operating license. The inspection consisted of selected examination of procedures and records, observations of activities, and interviews with personnel in accordance with the NRC special inspection team's charter (Enclosure 2).

Based on the results of this inspection, two findings of very low safety significance (Green) were identified. Both of these findings were determined to involve violations of NRC requirements. However, because of their very low safety significance, and because they have been entered into your corrective action program, the NRC is treating these findings as non-cited violations (NCVs), in accordance with Section VI.A.1 of the NRC Enforcement Policy. If you contest any NCV in this report, you should provide a response within 30 days of the date of this inspection report, with the basis for your denial, to the Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, DC 20555-0001; with copies to the Regional Administrator, Region I; the Director, Office of Enforcement, United States Nuclear Regulatory Commission, Washington, DC 20555-0001; and the NRC Resident Inspector at the Ginna facility.

In accordance with 10 CFR 2.790 of the NRC's "Rules of Practice," a copy of this letter and its enclosure will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records (PARS) component of NRC's document system (ADAMS). ADAMS is accessible from the NRC Web site at **http://www.nrc.gov/reading-rm/adams.html** (the Public Electronic Reading Room).

Sincerely,

/RA/

Wayne D. Lanning, Director
Division of Reactor Safety

Docket No. 50-244
License No. DPR-18

Enclosures:
1. Inspection Report 05000244/2003012 w/Attachment: Supplemental Information
2. Special Inspection Charter

cc w/encl:
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U.S. NUCLEAR REGULATORY COMMISSION

REGION I

Docket No:	50-244
License No:	DPR-18
Report No:	05000244/2003012
Licensee:	Rochester Gas and Electric Corporation (RG&E)
Facility:	R. E. Ginna Nuclear Power Plant
Location:	1503 Lake Road Ontario, New York 14519
Dates:	October 7 - 28, 2003
Inspectors:	J. Schoppy, Senior Reactor Inspector, DRS (Team Leader) J. Benjamin, Reactor Inspector, DRS C. Hunter, Risk and Reliability Engineer, OERAB, NRR W. Schmidt, Senior Reactor Analyst, DRS (Part Time)
Approved by:	Lawrence T. Doerflein, Chief Systems Branch Division of Reactor Safety

Enclosure 1

SUMMARY OF FINDINGS

IR 05000244/2003-012; 10/06/03 - 10/10/03; R. E. Ginna Nuclear Power Plant; Special Inspection of a containment sump screen bypass issue; Event Follow-up.

The special inspection was conducted by two regional inspectors, a NRR Risk and Reliability Engineer, and a regional Senior Reactor Analyst. The inspection identified two Green findings, both of which were NCVs. The significance of most findings is indicated by their color (Green, White, Yellow, Red) using IMC 0609, "Significance Determination Process (SDP)." Findings for which the SDP does not apply may be Green or be assigned a severity level after NRC management review. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process," Revision 3, dated July 2000.

A. NRC-Identified and Self-Revealing Findings

Cornerstone: Mitigating Systems

- Green. The inspectors identified a non-cited violation of 10 CFR Part 50, Appendix B, Criterion XVI, Corrective Actions, for RG&E's failure to promptly identify and take actions to address a condition adverse to quality. Specifically, RG&E did not promptly identify and correct several longstanding containment sump screen bypass flowpaths that had the potential to adversely impact emergency core cooling systems (ECCS) during containment recirculation.

  The finding was more than minor because it affected the Mitigating Systems cornerstone objective of ensuring the availability, reliability, and capability of ECCS to respond to initiating events (loss-of-coolant accidents (LOCAs)) to prevent undesirable conditions. The finding was associated with the design control and human performance attributes. The finding was considered to be of very low safety significance, because ECCS remained operable and there was no loss of safety function. Specifically, the finding did not represent an actual loss of ECCS function or of a single train that mitigates internal or external event (e.g., seismic, fire, flooding, or severe weather) core damage accident sequences. (Section 4OA3.1)

- Green. The inspectors identified a non-cited violation of 10 CFR Part 50, Appendix B, Criterion XVI, Corrective Actions, for RG&E's failure to promptly identify and take actions to address a condition adverse to quality. Specifically, RG&E did not promptly identify and correct containment sump debris that had the potential to adversely impact ECCS during containment recirculation.

  The finding was more than minor because it affected the Mitigating Systems cornerstone objective of ensuring the availability, reliability, and capability of ECCS to respond to initiating events (LOCAs) to prevent undesirable conditions. The finding was associated with the procedure quality and human performance attributes. The finding was considered to be of very low safety significance, because ECCS remained operable and there was no loss of safety function. Specifically, the finding did not represent an actual loss of ECCS function or of a single train that mitigates internal or external event

(e.g., seismic, fire, flooding, or severe weather) core damage accident sequences. (Section 4OA3.2)

B. Licensee Identified Violations

None.

Report Details

Background

On June 9, 2003, the NRC issued Bulletin 2003-01, "Potential Impact of Debris Blockage on Emergency Sump Recirculation at Pressurized-Water Reactors," to all pressurized-water reactor (PWR) licensees requesting that they provide a response within 60 days. On August 8, 2003, RG&E responded and stated that they had implemented interim compensatory measures (Option 2 as outlined in Bulletin 2003-01). In their Bulletin response, RG&E stated that they performed an initial evaluation of the sump screens using photographs taken during the April 2002 refueling outage (RFO) and identified no obvious gaps or breaches. Because the photographs did not provide conclusive evidence that no gaps or breaches existed, RG&E planned to perform additional sump screen inspections during the Fall 2003 RFO. On September 18, 2003, RG&E identified several containment sump bypass flowpaths during the RFO sump screen inspection. The bypass paths consisted of three holes through the steel deck plate covering the residual heat removal (RHR) suction side of the sump. The total surface area of the bypass holes was approximately 26 square inches. RG&E initiated action report (AR) 2003-2170 and reported the condition to the NRC via Event Notification Report 40184.

Ginna Containment Sump Design

Containment sump B is designed to provide the suction source for the two RHR pumps during the recirculation phase of a loss of coolant accident (LOCA). Depending on the break size and accident scenario, the RHR pumps may also supply the three safety injection (SI) pumps and/or the two containment spray (CS) trains during the recirculation phase. The B sump was designed to protect against the entrance of debris into the RHR system through the use of a curb (6 inches high), a horizontal floor grating (1 inch by 4 inch openings), and a vertical screen internal to the sump (3/16 inch by 9/16 inch mesh). Provided no bypass paths exist, all recirculated water must pass through the grating and the screen before entering one of the two RHR pump suctions within the B sump.

4. OTHER ACTIVITIES [OA]

4OA2 Identification and Resolution of Problems

Inspection findings in other sections of this report indicated a cross-cutting issue regarding RG&E's identification, evaluation, and resolution of problems, as follows:

1. Section 4OA3.1 - Failure to promptly identify and take actions to address a condition adverse to quality concerning containment sump screen bypass flowpaths. NRC-identified issues within the sump represented weak RG&E problem identification and highlighted RG&E's lack of attention-to-detail in their extent of condition review.

2. Section 4OA3.2 - Failure to promptly identify and take actions to address a condition adverse to quality concerning containment sump debris.

4OA3 Event Follow-up

1. Containment B Sump Screen Bypass Flow Paths and Root Cause Determination (IP 93812)

a. Inspection Scope

The inspectors assessed RG&E's immediate corrective actions following the identification of bypass flowpaths around the B sump screen on September 18, 2003. RG&E conducted a root cause evaluation for this issue. The inspection team reviewed the associated B sump modification work packages, Technical Specifications (TS), the Updated Final Safety Analysis Report (UFSAR), condition reports, operability and engineering evaluations, operating procedures, NRC generic communication responses, and other relevant documents. The inspectors interviewed key personnel and performed two containment walkdowns (including internal sump inspections). A list of the documents reviewed is provided in the attached Supplemental Information.

The inspectors reviewed a temporary and permanent modification package for the B sump screen developed to repair the bypass deficiency identified during the 2003 sump inspection. The permanent modification consisted of a stainless steel cover installed on the existing deck cover over the B sump. Additionally, stainless steel plates were installed over areas on the suction screen structure having greater than a 3/16 inch gap. The inspectors compared these modifications to the current design and licensing basis.

The inspectors reviewed RG&E's video of a 2003 B sump inspection and then independently conducted a walkdown of the B sump. The inspectors examined the modification from outside and within the B sump. The inspectors compared the installed modification to the design change documentation for compliance with the design basis. Additionally, the inspectors examined the B Sump for additional bypass flowpaths not previously identified.

The inspectors assessed the adequacy of RG&E's activities to determine the root causes of the B sump screen bypass flowpaths. The inspectors also independently assessed the causal factors for the B sump screen bypassing deficiencies and the appropriateness of the RG&E's initial corrective actions, including extent of condition reviews for other equipment, procedural, and human performance deficiencies.

b. Findings

Introduction. The inspectors identified a non-cited violation of 10 CFR Part 50, Appendix B, Criterion XVI, Corrective Actions, for RG&E's failure to promptly identify and take actions to address a condition adverse to quality concerning containment sump screen bypass flowpaths. The finding is considered to be of very low safety significance because there was no loss of safety function.

Description. On September 18, 2003, RG&E performed an inspection of the B sump in response to NRC Bulletin 2003-01. As a result of this inspection, RG&E identified three conduit bypass holes. As part of an extent of condition review, RG&E identified several ½ inch gaps along the perimeter of the B sump screen.

On October 7, the inspectors performed an internal sump inspection. The inspectors noted several issues not previously identified by RG&E. The inspectors identified (1) a loose nut on a screen top support bolt (AR 2003-2580), (2) undersized washers on the bottom support bolts for the screen (AR 2003-2580), (3) missing nuts on the saddle support for the reactor coolant drain tank (RCDT) located on the dirty side of the B sump (AR 2003-2581), (4) two metal pipe studs on the clean side of the B sump that had rags stuffed into them (AR 2003-2580), (5) a "retired-in-place" metal conduit (subsequently removed by RG&E), and (6) a bypass pocket in the top corner of the B sump that had greater than a 1/4 inch bypass gap (AR 2003-2603). Although this NRC-identified bypass path (approximately six square inches) and a smaller bypass path (around a RCDT line) identified by the inspectors on a subsequent walkdown did not adversely impact ECCS or CS operability, they highlighted RG&E's lack of attention-to-detail in their extent of condition review. In addition, the numerous NRC-identified issues within the sump represented weak RG&E problem identification.

The inspectors determined that the previous revision of RG&E's containment inspection procedure adequately satisfied RG&E's TS required sump inspection; however, RG&E did not effectively use available industry operating experience (OE) information to improve their sump inspection procedure over the years. As part of their immediate corrective actions to improve B sump closeout inspections, RG&E made changes to Procedure A-3.1, "Containment Storage and Closeout Inspection." The inspectors reviewed these changes and determined that they enhanced sump inspections and appropriately included sump-related industry OE.

RG&E performed a root cause analysis to evaluate the bypass flowpaths. RG&E determined that weak design control during a 1982 sump level instrumentation modification resulted in the bypass paths through the steel deck plate covering the RHR suction side of the sump. RG&E engineering determined that the other smaller bypass paths (gaps) had existed since original construction. Collectively, all the bypass paths resulted from old design issues; however, the inspectors identified that each represented missed opportunities and less than adequate RG&E problem identification over the years. The inspectors determined that RG&E did not take adequate actions to identify and correct longstanding sump deficiencies in spite of several opportunities to do so. On October 16, RG&E initiated AR 2003-2743 to evaluate the human performance aspects of the containment sump issues. In particular, RG&E planned to

evaluate their less than effective review of prior NRC sump inspection guidance and their failure to detect sump-related deficiencies during previous inspections.

The B sump is designed to prevent particles in excess of 1/4 inch in diameter from passing into the RHR suction piping during the recirculation phase of a LOCA. The location and size of these gaps could have allowed particles in excess of 1/4 inch to enter. Particles entering the suction of the RHR system could adversely affect safety-related systems during the recirculation phase of a LOCA. However, an engineering evaluation for past operability (AR 2003-2170) determined that the screen bypass flowpaths did not adversely affect the operability of the ECCS components or the CS system. Engineering's determination was based primarily on (1) the relatively small ratio of bypass path area to total screen area (0.4 percent), (2) relatively low recirculation flow velocity (< 0.2 fps), (3) time to switchover to recirculation, (4) RHR and SI system flowpaths, (5) debris obstruction provided by the 6 inch concrete curb, (6) potential debris generated for each LOCA class, (7) RHR and SI pump impeller clearances and seal design, (8) sump geometry and debris transport, and (9) emergency operating procedure (EOP) guidance. The inspectors reviewed engineering's operability determination, EOPs, and the applicable UFSAR sections to verify that past operability was adequately justified and that potentially affected ECCS components and CS would have remained available and capable of performing their intended safety functions.

Analysis. The inspectors considered RG&E's failure to take timely and adequate corrective actions for containment sump screen bypass issues a performance deficiency. RG&E had several opportunities based on previous NRC Information Notices and industry OE information relative to containment sump issues to have identified and corrected the degraded condition prior to the September 2003 inspection.

The inspectors determined that this finding was more than minor because it affected the Mitigating Systems cornerstone objective of ensuring the availability, reliability, and capability of ECCS to respond to initiating events (LOCAs) to prevent undesirable conditions. The finding was associated with the design control and human performance attributes.

The inspectors determined that the finding was of very low safety significance (Green) by the SDP Phase 1 screening worksheet for Mitigating Systems because ECCS remained operable and there was no loss of safety function. Specifically, the finding did not represent an actual loss of ECCS function or of a single train that mitigates internal or external event (e.g., seismic, fire, flooding, or severe weather) core damage accident sequences. Also, the inspectors determined that the inadequate corrective actions and weak problem identification were an example of a cross-cutting issue in problem identification and resolution.

Enforcement. 10 CFR Part 50, Appendix B, Criterion XVI (Corrective Action), requires, in part, that conditions adverse to quality are promptly identified and corrected. Contrary to this requirement, RG&E failed to promptly identify and correct B sump screen bypass flowpaths that had the potential to adversely impact ECCS during containment

recirculation. Specifically, the three larger bypass paths existed since RG&E modified the plant in 1982 and the remaining smaller paths existed since original plant construction. However, because of the very low safety significance and because the issue was entered into RG&E's corrective action program (ARs 2003-2170, 2003-2213, 2003-2603, 2003-2743), this finding is being treated as a non-cited violation, consistent with Section VI.A.1 of the NRC Enforcement Policy. **(NCV 05000244/2003012-01)**

2. Containment Sump Debris (IP 93812)

a. Inspection Scope

On October 6, 2003, the inspectors performed a containment walkdown, including an inspection of the B containment sump. The inspectors performed the walkdown and inspection to determine the status of sump corrective actions and the condition of the containment and sump.

The inspectors reviewed NRC generic communications and RG&E corrective action reports pertaining to problems (past and present) with the sump. The inspectors also reviewed RG&E's previous containment sump inspections and procedures. In addition, the inspectors asked RG&E personnel questions regarding the conduct of previous sump inspections. A list of the documents reviewed is provided in the attached Supplemental Information.

b. Findings

Introduction. The inspectors identified a non-cited violation of 10 CFR Part 50, Appendix B, Criterion XVI, Corrective Actions, for RG&E's failure to promptly identify and take actions to address a condition adverse to quality concerning debris located in the containment sump. The finding is considered to be of very low safety significance because there was no loss of safety function.

Description. On September 20, 2003, as a part of the initial B containment sump inspection performed in response to NRC Bulletin 2003-01, RG&E identified an approximately one inch-thick layer of solid crystal material covering the entire sump floor (AR 2003-2196). The layer of crystal material covered both the RHR suction (clean side) and RCDT (dirty side) sides of the containment sump floor. Maintenance removed the crystal material and placed it into three 55-gallon barrels. In addition, on September 21, 2003, RG&E also discovered small debris (e.g., paper, plastic equipment labels, and plastic tie-wraps) on both sides of the sump. During subsequent containment walkdowns, the inspectors did not find similar crystal material deposits, or traces thereof, in any other areas of containment.

The chemical analysis concluded that the crystal material was comprised mostly of boric acid. An activity analysis performed revealed that some of the material had been deposited in the sump up to eight years ago. The activity ratios and crystal material chemical composition are consistent with RHR leakoff into the sump during valve testing

of the sump suction valves (851A and 851B).

The inspectors independently inspected the barrels of "solid boric acid residue." On October 9, 2003, the inspectors identified several pieces of debris, not previously identified (documented and evaluated) by RG&E, entrained within the solid crystal pieces removed from the RHR side (clean side) of B containment sump floor. In response to the inspectors's request, RG&E personnel sifted through the barrels of material and classified 20 individual items as debris. RG&E personnel analyzed the debris for dimensional data, mass, and buoyancy. The total mass of the 20 items found was approximately 165 grams. RG&E categorized the debris as follows: (1) eight heavy density objects (e.g., a metallic bolt and uni-strut clamp), (2) four medium density objects (e.g., a woven gasket ring and mop threads), and (3) eight low density objects (e.g., duct tape). The inspectors noted that RG&E's initial AR (AR 2003-2196) and evaluation focused exclusively on the crystalline material and failed to identify and evaluate the debris embedded in this material. RG&E's lead engineer for the sump project indicated that they were aware of the debris, but had not had the opportunity to sort through the barrels to evaluate the characteristics of the debris, but that they had planned to do so.

The inspectors determined that RG&E personnel did not demonstrate a questioning attitude during previous sump inspections relative to the solid crystal material covering the entire sump floor. Allowing the crystal material and other debris to remain in the sump for approximately eight years represented missed opportunities and less than adequate RG&E problem identification over the years. In addition, the condition highlights weak foreign material exclusion controls and low material condition standards. The inspectors also determined that RG&E did not take adequate actions to identify and correct this longstanding sump deficiency in spite of several opportunities to do so. On October 16, 2003, RG&E initiated AR 2003-2743 to evaluate the human performance aspects of the containment sump issues. In particular, RG&E planned to evaluate their less than effective review of prior NRC sump inspection guidance

On October 20, 2003, RG&E performed a past operability evaluation considering all of the debris found in the containment sump. A sample of the boric acid crystal material was tested to determine its solubility in borated water at approximately 212°F (simulated conditions of the sump during recirculation). The sample dissolved in approximately four minutes. During a design basis accident, the minimum time required to switchover to containment recirculation is 22 minutes. Since the sump water would be in excess of 212°F, RG&E concluded that the boric acid crystal layer found in the containment sump would have dissolved if a LOCA had occurred and recirculation had been required.

Buoyancy testing, performed in boiling water, revealed that the heavier density items found would sink and remain stationary. The lighter items would float, and swirl up and down due to the boiling action of the water. The medium density mop threads, slowly sank to the bottom of the beaker, while the threads remained vertically oriented. Due to the limited mass, if the mop threads and lighter items of debris entered into the recirculation piping, the RHR pump's impeller would likely chop up the material further.

Based on this analysis, engineering determined that any material passing through the rest of the ECCS would likely have no adverse effects on long-term core cooling. The inspectors reviewed engineering's operability determination, EOPs, and the applicable UFSAR sections to ensure that operability was justified and that potentially affected ECCS components and CS remained available and capable of performing their respective design basis functions.

Analysis. The inspectors considered RG&E's failure to take timely and adequate corrective actions for removing the containment sump debris during previous outages a performance deficiency. RG&E had several opportunities based on previous NRC Information Notices and industry OE information relative to containment sump issues to have identified and corrected the degraded condition prior to the September 2003 inspection.

The inspectors determined that this finding was more than minor because it affected the Mitigating Systems cornerstone objective of ensuring the availability, reliability, and capability of ECCS to respond to initiating events (LOCAs) to prevent undesirable conditions. The finding was associated with the procedure quality and human performance attributes.

The inspectors determined that the finding was of very low safety significance (Green) by the SDP Phase 1 screening worksheet for Mitigating Systems because ECCS and CS remained operable and there was no loss of safety function. Specifically, the finding did not represent an actual loss of ECCS function or of a single train that mitigates internal or external event (e.g., seismic, fire, flooding, or severe weather) core damage accident sequences. Also, the inspectors determined that the inadequate corrective actions and weak problem identification were an example of a cross-cutting issue in problem identification and resolution.

Enforcement. 10 CFR Part 50, Appendix B, Criterion XVI (Corrective Action), requires, in part, that conditions adverse to quality are promptly identified and corrected. Contrary to this requirement, RG&E failed to promptly identify and correct containment sump debris that had the potential to adversely impact ECCS during containment recirculation. Specifically, the debris existed in the sump for approximately eight years or longer. However, because of the very low safety significance and because the issue was entered into RG&E's corrective action program (AR 2003-2196 and 2003-2743), this finding is being treated as a non-cited violation, consistent with Section VI.A.1 of the NRC Enforcement Policy. **(NCV 05000244/2003012-02)**

3. Containment Sump Screen Design Basis (IP 93812)

a. Inspection Scope

While reviewing the video tape of RG&E's sump inspection, the inspectors noted that the actual as-built screen mesh dimensions were inconsistent with the RG&E UFSAR description. The Ginna UFSAR states that the screen "has the capability to exclude particles greater than 1/4 inch in diameter from the residual heat removal pump suction." However, the actual screen mesh size is 3/16 inch by 9/16 inch (verified by RG&E), and therefore, non-spherical particles greater than 1/4 inch could potentially pass through the screen during containment recirculation.

In response to the inspectors question, RG&E promptly initiated AR 2003-2605 to evaluate the condition. RG&E engineering documented their operability determination in NCT01, "Operability Determination for Containment Sump B Screen Size." Engineering determined that the larger sump screen size (mesh greater than 1/4 inch) did not adversely affect the operability of the ECCS components or the CS system. Engineering's determination was based primarily on (1) relatively low recirculation flow velocity, (2) time to switchover to recirculation, (3) RHR and SI system flowpaths, (4) debris obstruction provided by the 6 inch concrete curb, (5) potential debris generated for each LOCA class, (6) RHR and SI pump impeller clearances and seal design, and (7) EOP guidance. The inspectors reviewed engineering's operability determination, EOPs, and the applicable UFSAR sections to ensure that operability was justified and that potentially affected ECCS components and CS remained available and capable of performing their respective design basis functions.

b. Findings

No findings of significance were identified.

4OA6 Meetings, including Exit

On October 28, 2003, the inspectors presented the inspection findings to Dr. Robert Mecredy and other members of RG&E management. The inspectors verified that none of the information reviewed or contained in the inspection report was considered proprietary.

ATTACHMENT 1
SUPPLEMENTAL INFORMATION

Key Points of Contact

M. Flaherty	Nuclear Safety & Licensing Manager
B. Flynn	Manager, Primary Systems
R. Mecredy	VP, Nuclear Operations
J. Widay	VP, Plant Manager
D. Wilson	Licensing Engineer

List of Items Opened, Closed, and Discussed

Opened/Closed

05000244/2003012-01	NCV	Failure to promptly identify and take actions to address a condition adverse to quality concerning containment sump screen bypass flowpaths. (Section 4OA3.1)
05000244/2003012-02	NCV	Failure to promptly identify and take actions to address a condition adverse to quality concerning containment sump debris. (Section 4OA3.2)

List of Documents Reviewed

Procedures

ECA-1.1, Loss of Emergency Coolant Recirculation, Rev. 22
ES-1.2, Post LOCA Cooldown and Depressurization, Rev. 26
ES-1.3, Transfer to Cold Leg Recirculation, Rev. 36
Procedure A-3.1, Containment Storage and Closeout Inspection, Rev. 30
Procedure A-3.1, Containment Storage Inspection, Rev. 29
IP-HSC-3, Housekeeping Control, Rev. 9
ND-HSC, Housekeeping and System Cleanness and Foreign Material Exclusion (FME), Rev. 5

Inspection and Testing

Procedure A-3.1, Containment Storage and Closeout Inspection, dated 10/14/03
Procedure A-3.1, Containment Storage Inspection, dated 11/18/97, 4/20/99, 10/17/00, 4/17/02

NRC Generic Communications and RG&E's Responses (except when indicated)

GL 85-22, Potential For Loss Of Post-LOCA Recirculation Capability Due To Insulation Debris Blockage, dated 12/03/1985
IN 88-28, Potential for Loss of Post-LOCA Recirculation Capability Due to Insulation Debris Blockage, dated 05/19/1988 (No RG&E Response Found)
IN 89-77 & Supplement 1, Debris in Containment Emergency Sumps and Incorrect Screen Configurations, dated 11/21/1989
IN 90-07, New Information Regarding Insulation Material Performance and Debris Blockage of PWR Containment Sumps, dated 01/30/1990
IN 92-71, Partial Plugging of Suppression Pool Strainers at a Foreign BWR, dated 09/30/1992
IN 92-85, Potential Failures of Emergency Core Cooling Systems Caused By Foreign Material Blockage, dated 12/23/1992
IN 93-34 & Supplement 1, Potential For Loss of Emergency Cooling Function Due to a Combination of Operational and Post-LOCA Debris in Containment, dated 04/26/1993
Bulletin 93-02 & Supplement 1, Debris Plugging of Emergency Core Cooling Suction Strainers, dated 05/11/1993
IN 94-57, Debris in Containment and the Residual Heat Removal System, dated 08/12/1994
IN 95-06, Potential Blockage of Safety-Related Strainers by Material Brought Inside Containment, dated 01/25/1995
IN 95-47 & Revision 1, Unexpected Opening of a Safety/Relief Valve and Complications Involving Suppression Pool Cooling Strainer Blockage, dated 10/04/1995
Bulletin 95-02, Unexpected Clogging of a Residual Heat Removal, dated 10/17/1995
IN 96-10, Potential Blockage by Debris of Safety System Piping Which is Not Used During Normal Operation or Tested During Surveillance, dated 02/13/1996
IN 96-27, Potential Clogging of High Pressure Safety Injection Throttle Valves During Recirculation, dated 05/01/1996
Bulletin 96-03, Potential Plugging of Emergency Core Cooling Suction Strainers by Debris in Boiling-Water Reactors, dated 05/06/1996
IN 96-59, Potential Degradation of Post Loss-of-Coolant Recirculation Capability as a Result of Debris, dated 10/30/1996
GL 97-04, Assurance of Sufficient Net Positive Suction Head for Emergency Core Cooling and Containment Heat Removal Pumps, dated 10/07/1997
GL 98-04, Potential for Degradation of the Emergency Core Cooling System and the Containment Spray System after a Loss-of-Coolant Accident Because of Construction and Protective Coating Deficiencies and Foreign Material in Containment, dated 07/14/1998
Bulletin 2003-01, Potential Impact of Debris Blockage on Emergency Sump Recirculation at Pressurized-Water Reactors, dated 06/09/2003

Other Containment Sump Related Correspondence and Operating Experience

NRC Regulatory Guide 1.82, Water Sources For Long-Term Recirculation Cooling Following A Loss-Of-Coolant Accident, Revision 1
LA-UR-02-7562, The Impact of Recovery From Debris-Induced Loss of ECCS Recirculation on PWR Core Damage Frequency, February 2003
NUREG/CR-6762, Vol. 1 LA-UR-01-4083, GSI-191 Technical Assessment: Parametric Evaluations for Pressurized Water Reactor Recirculation Sump Performance
NUREG/CR-6762, Vol. 2 LA-UR-01-1800, GSI-191 Technical Assessment: Summary and Analysis of U.S. Pressurized Water Reactor Industry Survey Responses and Responses to GL 97-04
LER 36193010, Configuration of Containment Sump Cover Plate, dated 12/22/1993
LER 42396039, Recirculation Spray & Emergency Core Cooling Systems Potentially Inoperable Following a Postulated LOCA - Due to Existing Debris in RSS Sump and Improper Configuration of Sump Cover Plates, dated 11/14/1996
LER 05000313, Breaches in the Reactor Building Sump Integrity which Resulted from an Inadequate Design Review Created the Potential for Degraded Low Pressure Injection, High Pressure Injection and Reactor Building Spay System Flows During the Recirculation Mode of Operation Following a LOCA, dated 12/16/1993
LER 28990002, Gaps in the Reactor Building Sump Screen, dated 03/02/1990

Risk Related

PSAER No. 2003-0032, Rev. 0, Ginna Station PSA Evaluation Request, dated 09/22/2003
Risk Informed Inspection Notebook for R.E. Ginna Nuclear Power Plant, Rev. 2

Design and Licensing Basis

UFSAR Figure 6.2-44, Rev.16, Sump B to Reactor Coolant Drain Tank Pump B Penetration 142
UFSAR Chapter 6, Engineered Safety Features
UFSAR Section 6.2.2, Containment Heat Removal Systems
Technical Specification SR3.5.2.7
GL 91-18, Rev. 1, Attachment 1, Resolution of Degraded and Nonconforming Conditions
NRC Inspection Manual Part 9900, Operable/Operability: Ensuring the Functional Capability of a System or Component

Drawings

Drawing 33013-2836, Rev. 0, Containment Equipment, Elevations and Approximate Volumes (Cross Sectional View)
Drawing D-521-064, Rev. IV, Reactor Containment Vessel Upper Core Internals Storage Plans, Sections & Details
Drawing D-521-063, Rev. V, Reactor Containment Vessel Sump Platform Elev. 216'0" & Misc. Steel Details Sump A & Sump B

Calculations and Modifications

NSL-0000-DA027 Rev. 1, Residual Heat Removal NPSH Calculations During Accident Conditions, dated 03/05/1998
IP-DES-3, Rev. 10 Attachment 4, Temporary Modification Permit No. 2003-0019, dated 09/22/2003
EWR 10034, Rev. 2, Calculation No. M-0800-01, Calculation Sheet for Containment Sump Evaluation for Insulation Replacement, dated 01/24/1995
EWR 3262, Rev. 3, Design Criteria Ginna Station Sump B Level Indication, dated 4/20/1982
Temporary Modification No. 2003-0019 (WO#20302361, WO#20302363), Provide a Temporary Cover for Conduit Openings Penetrating the Solid Deck Cover at the Top of "B" Containment Recirculating Sump
PCR No. 2003-0032 (WO# 20302363, 20302593), Containment Sump B Gap Issues

Corrective Action Reports

1997-1113	2003-2196	2003-2265	2003-2400
2000-1005	2003-2213	2003-2269	2003-2581*
2000-1356	2003-2230	2003-2270	2003-2580*
2003-2137	2003-2247	2003-2311	2003-2605*
2003-2170	2003-2248	2003-2363	2003-2743*
2003-2192			

* NRC identified issues during the inspection

Miscellaneous

Event Notification 40184, Reactor Plant Event Notification Worksheet, dated 09/19/2003
Summary No. NO3527, Cavity Leakage Examination, 2003 Refueling Outage
System Health Report -2003/7, PSSL 21, Containment Structures
Rochester Gas & Electric Inter-Office Correspondence; To: Mark Flaherty, From: Gregory C. Jones, Subject: "B" Sump Deposits

List of Acronyms

AR	Action Report
ALARA	As Low As Is Reasonably Achievable
CS	Containment Spray
ECCS	Emergency Core Cooling System
EOP	Emergency Operating Procedure
EPG	Emergency Procedure Guideline
ERG	Emergency Response Guideline
FPS	Feet Per Second
GL	Generic Letter
IN	Information Notice
LER	License Event Report
LOCA	Loss-Of-Coolant Accident
NCV	Non Cited Violation
NRC	Nuclear Regulatory Commission
NRR	Nuclear Reactor Regulation
OE	Operating Experience
OERAB	Operating Experience Risk Analysis Branch
PWR	Pressurized-Water Reactor
RCDT	Reactor Coolant Drain Tank
RCS	Reactor Coolant System
RFO	Refueling Outage
RG&E	Rochester Gas and Electric Company
RHR	Residual Heat Removal
RWST	Refueling Water Storage Tank
SDP	Significance Determination Process
SI	Safety Injection
SRA	Senior Reactor Analyst
TS	Technical Specification
UFSAR	Updated Final Safety Analysis Report

Attachment

ENCLOSURE 2

October 7, 2003

MEMORANDUM TO: Lawrence Doerflein, Manager
Special Inspection

Joseph Schoppy, Leader
Special Inspection

FROM: Wayne D. Lanning, Director **/RA/** R. Crlenjak for
Division of Reactor Projects

SUBJECT: SPECIAL INSPECTION CHARTER - GINNA

A special inspection has been established to inspect and assess a potentially significant unplanned degraded condition identified on September 18, 2003 by the licensee at Ginna. The special inspection will start during the week of October 6, 2003 and will include:

Manager: Lawrence Doerflein, Chief, System Branch, DRS

Leader: Joseph Schoppy, Senior Reactor Inspector

Members: Chris Hunter, Operating Experience Risk Analysis Branch
Wayne Schmidt, Senior Reactor Analyst - Part Time
Jamie Benjamin, Reactor Inspector, DRS

Background

On September 18, 2003, the licensee, in response to NRC Bulletin 2003-01, identified a potential flow path into the containment sump that bypasses the sump screen. Containment Sump 'B' is designed to provide the suction source for the Residual Heat Removal System and potentially the Safety Injection and Containment Spray modes during the recirculation phase of an accident. The sump was designed to protect against the entrance of debris into the RHR system through the use of curbs, gratings and a screen. Three holes through the steel plating were found resulting in an annulus area around conduit which would have allowed some material to bypass the sump screen.

Special Inspection

This special inspection was initiated in accordance with NRC Management Directive 8.3, "NRC Incident Investigation Program." The decision to perform this inspection was based on the deterministic criterion involving a deficiency in design, construction, or operation having potential generic safety implications. The associated incremental conditional core damage probability of the condition was estimated as a range from high E-7 to a low E-6 depending upon various assumptions on the impact of downstream equipment due to the potential for material to bypass the sump screen. This range suggests either resident inspector follow-up or a special inspection. Due to the complexities of the issue and their influence on the range of risk calculations, a special inspection was determined to be warranted.

The special inspection will be performed in accordance with guidance of NRC Inspection Procedure 93812, "Special Inspection," and the inspection report will be issued within 45 days following the exit meeting. Inspection objectives are listed in the attached charter. In general, this inspection should evaluate and assess the immediate corrective actions performed for the degraded condition along with any performance issues associated with the cause of the condition. Questions regarding the objectives of the attached charter may be referred to James Trapp.

Attachment: Special Inspection Charter

SPECIAL INSPECTION CHARTER
GINNA
BYPASS FLOWPATH TO CONTAINMENT SUMP 'B'

The objectives of the inspection are to determine the facts and assess the conditions surrounding the degraded containment sump condition that was identified at Ginna on September 18, 2003. Specifically, the inspection should assess the licensee's performance related to the degraded condition including immediate corrective actions taken.

General Charter Areas:

1. Assess the adequacy of the licensee's immediate corrective actions with respect to resolution of the degraded condition.

2. Assess the adequacy of the licensee's preliminary root cause or apparent cause evaluation, extent of condition review, and corrective actions. Include a review of the effectiveness of prior corrective actions or missed opportunities to identify the degraded condition.

3. Identify any associated licensee performance deficiencies relative to the degraded condition.

4. Evaluate the licensee's assessment of the risk significance of the degraded condition, including evaluation of input assumptions. Independently evaluate the risk significance.

5. Document the inspection findings and conclusions in a special inspection report in accordance with Inspection Procedure 93812 within 45 days of the exit meeting for the inspection.