

U. S. NUCLEAR REGULATORY COMMISSION
REGION I

Report No. 50-244/84-22

Docket No. 50-244

License No. DPR-18 Priority -- Category C

Licensee: Rochester Gas and Electric Corporation
49 East Avenue
Rochester, New York 14649

Facility Name: R. E. Ginna Nuclear Power Plant

Inspection At: Ontario, New York

Inspection Conducted: September 16, 1984 through October 31, 1984

Inspectors:

W. A. Cook for 11/7/84
W. A. Cook, Resident Inspector, Ginna Date

Approved by:

Samuel Collins 11/15/84
S. J. Collins, Chief, Reactor Project Date
Section No. 2C DPRP

Inspection Summary:

Inspection on September 16, 1984 through October 31, 1984
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Areas Inspected: Routine, onsite, regular, and backshift inspection by the resident inspector (137 hours). Areas inspected included: plant activities during routine operations; licensee action on previous findings; surveillance testing; DB-25 breaker failure; review of TMI Action Plan item; plant maintenance; plant simulator construction; calorimetric calculation error; Licensee Event Report review; and inspection of accessible portions of the facility during plant tours.

Results: Of the ten areas inspected, no violations were identified.

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DETAILS

1. Persons Contacted

The below listed technical and supervisory level personnel were among those contacted:

- C. Edgar, Instrumentation and Control Supervisor
- D. Gent, Results and Test Supervisor
- N. Goodenough, Project Quality Control Engineer
- G. Larizza, Operations Manager
- G. Maier, Simulator Training Manager
- R. Mecredy, Manager, Nuclear Engineering
- T. Meyer, Technical Manager
- K. Nassauer, Quality Control Supervisor
- J. Neis, Liaison Engineer
- J. St. Martin, Liaison Coordinator
- J. Snelson, Westinghouse Site Representative
- B. Snow, Plant Superintendent
- S. Spector, Assistant Plant Superintendent
- W. Stiewe, Quality Control Engineer
- G. Voci, Mechanical Engineer
- G. Wahl, Maintenance Foreman
- J. Widay, Reactor Engineer

The inspectors also interviewed and talked with other licensee personnel during the course of the inspection.

2. Licensee Action on Previous Inspection Findings

(Closed) Inspector Follow-up Item (82-LO-07): Reactor Coolant System Cooldown Rate exceeded. The plant transient associated with the steam generator tube rupture event of January 25, 1982, resulted in plant operators permitting a cooldown rate in excess of 100 degrees Fahrenheit per hour in the faulted 'B' loop. In the Westinghouse report submitted as an attachment to the Maier-Crutchfield letter dated April 26, 1982, the evaluation of the thermal transient demonstrated that the integrity of the reactor vessel beltline, reactor vessel inlet nozzle and safety injection nozzle were in no manner impaired. In addition, the inspector reviewed Emergency Procedures (E)-1.2, "Loss of Reactor Coolant" and E-1.4, "Steam Generator Tube Rupture", and determined that specific precautions were incorporated into the procedures to limit Reactor Coolant System Cooldown Rates to less than 100 degrees per hour.

(Closed) Inspector Follow-up Item (82-LO-13): Inoperable Fire Detection Zones. On May 18, 1982, while performing procedure RSSP-2.1, "Safety Injection Functional Test", the Satellite Station "A" (SSA) for the Fire Detection System lost all AC power. This condition existed for more than one hour without proper firewatch patrols being established. The cause of the problem was determined to be a procedural deficiency. The test procedures did not identify the necessity for compensatory measures in that there was no battery backup to the SSA.

Immediate corrective actions were taken to change the governing test procedures. A modification was recently completed and operationally tested which provides a permanent battery backup power supply to SSA and allows uninterrupted operation of the fire system in the event of a station "blackout". The inspector reviewed the station modification package, Engineering Work Request No. 1832B and completed functional test results for the Satellite Station "A" Battery Backup conducted in accordance with Station Modification Procedure (SM)-1832B.96. No discrepancies were noted. The inspector had no further questions.

(Open) Inspector Follow-up Item (84-01-01): Revise Procedures to detail licensee actions upon receipt of 10 CFR Part 21 Reports. The inspector reviewed Corrective Action Report No. 1526 and determined that the licensee will identify, evaluate, resolve and document Part 21 reports via their Non-Conformance Report (NCR) System. The inspector will conduct a review of the applicable administrative procedures and Quality Assurance Manual, Section 15 and 16 after the licensee has completed the necessary procedural reviews and instituted the new revisions.

(Open) Inspector Follow-up Item (84-03-07): Licensee to describe program for control of stopwatches. As documented in Inspection Report No. 50/244-84-03, the inspector substantiated an allegation stating that stopwatches used in the performance of Technical Specification surveillance tests are not calibrated. The licensee agreed, although stopwatch calibrations were not a requirement, that a periodic comparison would be reasonable and that Administrative Procedure (A)-1201, "Calibration and Control of Test Equipment" would be revised to address the issue. The inspector determined that no action has been taken, to date, to address this item and that no method for tracking this item had been assigned by the licensee. The inspector addressed stopwatch controls with the Quality Control Engineer and plant management and they affirmed that the issue would be reviewed and incorporated in the current effort to revise the entire test and measurement equipment calibration and control program.

(Closed) Inspector Follow-up Item (84-10-01): Failure to remove and properly verify removal of Hold tags. On May 30, 1984, the resident inspector identified invalid Hold tags on two motor-operated valves in the Standby Auxiliary Feedwater System. The Hold had been released on the two valves, however, the tags had not been removed or verified removed as prescribed by station procedures. The inspector reviewed Corrective Action Report No. 1559 and discussed the completed corrective actions with the licensee. The inspector had no further questions.

(Closed) Violation (84-16-01): Failure to utilize proper Administrative Procedures for the control of Technical Specification (TS) Designated Fire Protection System. The inspector reviewed the corrective actions identified in the licensee's response, Kober to Starostecki letter, dated September 28, 1984, and Corrective Action Report No. 1566 to verify adequacy and proper implementation. In addition, the inspector discussed corrective actions with the licensee plant staff and management and determined that satisfactory resolution appeared to have been achieved. The inspector had no further questions.

3. Review of Plant Operations

- a. Throughout the reporting period, the inspector reviewed plant operations. Activities in progress included routine full power operations, with the exception of the event discussed below.
- During the week of October 7, the licensee removed the first of six spent fuel racks to be modified to increase spent fuel storage capacity. The rerack modification is expected to take a minimum of five to six months to complete, but not to interfere with the currently scheduled refueling outage in March 1985. The work is being performed by a contractor, Nuclear Power Services, with engineering and material support by U.S. Tool and Die Company. The modification consists of the installation of a boron-impregnated material in each of the chambers of the spent fuel rack. This will permit placement of fuel assemblies in each of the chambers of the spent fuel rack 14 by 10 matrix, essentially doubling previous capacity.
 - On October 11, Periodic Test (PT)-1, "Rod Controls System", was performed by control room operators to satisfy the monthly surveillance requirement for verification of operability of all full length control rods. Routine review of the completed procedure on October 15 by the Results and Test Supervisor identified that control rod C-5 had not been observed to travel the minimum required ten steps. PT-1 was subsequently reformed and rod C-5 was observed to satisfactorily travel the minimum ten steps to verify operability. Subsequent review of the computer printout determined that rod C-5 had traveled the required 10 steps on October 11, but was apparently recorded in error on the data sheet by the operator performing the test.

Further review of the completed procedure by the Technical Manager identified that the controlling bank of rods, bank 'D', had been omitted from the test and the associated data sheet marked N/A for bank 'D' rods. A procedural step of PT-1 specifically excludes testing of the controlling rod bank. Technical Specification Table 4.1-2 specifies any rod not fully inserted is to be tested monthly. A review conducted by the licensee and inquiries made by the resident inspector to NRR reviewers was unsuccessful in determining a reason for the omission or identifying a possible exemption given to the testing of the controlling rod bank at Ginna.

Surveillance testing of full length control rods in accordance with PT-1 and the resultant exclusion of the controlling rod bank from the test is contrary to Technical Specification Table 4.1-2 which states that for all full length control rods not fully inserted, movement of at least 10 steps in any one direction is required to be performed monthly.

A Notice of Violation is not issued in response to this event in that: the licensee identified this Technical Specification violation; this violation is categorized as severity Level V; the licensee promptly reported the violation to the NRC; corrective actions to preclude a recurrence inclusive of an immediate reperformance of PT-1 on the controlling rod bank, a procedural change which deletes the step omitting the test requirements for the controlling rod bank and training to alert operators of the procedural change; and that no similar violation has been identified in this area. The inspector had no further questions.

- On October 12, while conducting diving operations in the spent fuel pool as required for spent fuel rack modifications, the cable and hook on the spent fuel pit crane hoist unwound and fell into the spent fuel pool. No personnel injuries or damage to the pool or equipment was sustained. The inspector determined that the cause of the event was personnel error. A health physics technician inadvertently lowered the crane hook below a point where the hoist cable will not hold its own weight on the cable drum. In that the cable is not affixed to the drum, and no mechanical stop is installed, the cable unwound freely under its own weight. A similar event occurred earlier this year resulting in damage to the fuel assembly transfer car while conducting training with the dummy fuel assembly. The inspector determined that a caution sign is taped to the crane control box warning against lowering the cable hook below a certain point, however, the health physics technician was unaware of the precaution. Operation of the hoist by other than a qualified rigger is contrary to administrative procedure A-1302, "Control of Material and Handling Equipment." It was determined that the rigger, though in the area, was involved with other duties when the diver requested that the hoist be lowered slightly.

The inspector discussed this event with plant management and determined that a modification to replace the spent fuel pool crane hoist is pending. The replacement hoist will, by design, eliminate the unwinding problem. In addition, plant personnel have been reminded that no one is to operate the spent fuel pool crane except designated station riggers. Those individuals directly involved in spent fuel rack modification have likewise been instructed as to the limitations of their duties and responsibilities. The inspector had no further questions.

b. During the course of the inspection, tours of the following plant areas were conducted:

- Control Room
- Auxiliary Building
- Intermediate Building (including control point)
- Service Building
- Battery Rooms
- Turbine Building
- Diesel Generator Rooms
- Screenhouse
- Yard Area and Perimeter

c. The following areas were observed during the tours:

1. Operating logs and records. Records were reviewed against Technical Specifications and administrative procedure requirements.
2. Monitoring instrumentation. Process instruments were observed for correlation between channels and for conformance with Technical Specification requirements.
3. Annunciator alarms. Various alarm conditions which had been received and acknowledged were observed. These were discussed with shift personnel to verify that the reasons for the alarms were understood and corrective action, if required, was being taken.
4. Shift manning. Control Room and shift manning were observed for conformance with 10 CFR 50.54, Technical Specifications, and administrative procedures.
5. Radiation protection controls. Areas observed included control point operation, posting of radiation and high radiation areas, compliance with Radiation Work Permits (RWP) and Special Work Permits (SWP), personnel monitoring devices being properly worn, and personnel frisking practices.
6. Fire protection. Fire detection and fire-fighting equipment and controls were observed for conformance with Technical Specifications (TS) and administrative procedures requirements.
7. Security. Areas were observed for conformance with regulatory requirements and implementation of the site security plan, inclusive of administrative procedures for vehicle and personnel access, and verification of protected and vital area integrity.

8. Plant housekeeping. Plant conditions were observed for conformance with administrative procedures. Storage of material and components was observed with respect to prevention of fire and safety hazards. Housekeeping was evaluated with respect to controlling the spread of surface and airborne contamination.
9. Equipment lineups. Valve and electrical breakers were verified to be in the position or condition required by Technical Specifications and plant lineup procedures for the applicable plant mode. This verification included routine control board indication review and conduct of a partial systems lineup check of the Safety Injection and Core Spray Systems on September 20.
10. Equipment tagging. Selected equipment, for which tagging requests had been initiated, was observed to verify that tags were in place and the equipment in the condition specified.

Except as noted above, the inspector had no further questions.

4. Surveillance Testing

- a. The inspector witnessed the performance of surveillance testing of selected components to verify that the test procedure was properly approved and adequately detailed to assure performance of a satisfactory surveillance; test instrumentation required by the procedure was calibrated and in use; the test was performed by qualified personnel; the test results satisfied Technical Specifications and procedural acceptance criteria, or were properly dispositioned.
- b. The inspector witnessed the performance of portions of the following tests:

PT- 3, "Containment Spray Pumps and NaOH Additive System", performed on September 20.

PT-5.10, "Process Instrumentation Reactor Protection Channel Trip Test (Channel 1)", performed on October 15.

5. Failure of Westinghouse DB-25 Breaker

On Thursday, September 20, a fire was called away due to smoke coming from the 1A Instrument Air Compressor breaker (Westinghouse DB-25) in non-safeguards Bus No. 13. The station fire brigade and electrical shop personnel responded. Unsuccessful attempts were made by the electrical shop foreman to manually trip the breaker. The breaker was finally racked-out under load and the station subsequently secured from the fire.

Investigation revealed that the breaker was being mechanically held closed by the linkage associated with the shunt trip alarm switch attachment. Further investigation indicated the bracket holding the shunt trip in place had moved. The movement is allowed by the tolerances of the bolt holes on the mounting bracket. This small amount of movement (less than 1/8 inch) is sufficient to permit the angle on the linkage at the pivot to increase to a point where instead of following its normal operation during breaker opening, the linkage prevents operation of the breaker trip bar. With the breaker mechanically held closed, it could not open either manually or on fault. This problem was repeatable on the test bench.

Ginna utilizes four DB-25 breakers in safety related applications (service water pump motors). All four breakers were inspected for similar problems. With one exception, all breakers were inspected as satisfactory. On one breaker, the shunt trip coil bracket could be moved, but the fault could not be reproduced. The bracket was subsequently tightened.

The inspector determined that after the completion of further testing and evaluation, Westinghouse plans to transmit a bulletin to alert other licensees of this potential problem.

The inspector had no further questions regarding the licensee's actions in this area.

6. Implementation of Three Mile Island (TMI) Lessons Learned

The inspector reviewed licensee's actions associated with the following TMI Action Plan item (NUREG-0737), to verify that the licensee commitments were met.

Control-Room Habitability Requirements (III.D.3.4)

References:

NUREG-0737, "Clarification of TMI Action Plan Requirements"
 Generic Letter No. 83-37, "NUREG-0737 Technical
 Specifications", dated November 1, 1983
 Kober to Paulson Ltr, dated August 30, 1984
 Crutchfield to Maier Ltr, dated April 11, 1983
 Crutchfield to Maier Ltr, dated March 14, 1983
 Maier to Crutchfield Ltr, dated March 7, 1983

This item required the licensee to provide adequate protection to the control room operators from the potential effects of an accidental release of toxic or radioactive gases and to ensure the plant could be safely operated or shut down under design basis accident conditions as specified in Criterion 19 of Appendix A to 10 CFR Part 50.

The inspector reviewed Engineering Work Request Number 3595, "Control Room Habitability Modification", and the respective Station Modification (SM) No. 3595 series procedures. The inspector determined that the modifications specified and approved by the above stated references appear to be properly installed and operable. The modification consists of additional instrumentation and controls to detect ammonia, chlorine and airborne radioactive particulate, gases and iodine at the control room ventilation system intake. Upon detection of these elements at specified concentrations, intake and exhaust isolation dampers will close before potentially toxic or hazardous levels are reached.

The inspector reviewed Health Physics Procedure (HP)-11.5.7, "Calibration and/or Maintenance of NRC Model SM-102 Vent Monitor" and determined that adequate procedures for the periodic verifications of the operability of the radioactive gases, particulate and iodine detectors have been established. Calibration and maintenance procedures for the ammonia and chlorine detectors have not yet been approved. The inspector will review these procedures in a subsequent report. (84-22-01) In addition, the inspector determined that a Technical Specification amendment to address the control room ventilation modifications has been submitted to the NRC staff for approval as documented in the Kober to Denton letter dated September 14, 1984.

During modification testing in accordance with SM-3595.5, "Functional Test and Air Balance of Control, Relay, and Computer Room HVAC Systems", the licensee determined that the originally installed automatic closing dampers 'A' and 'C' did not close upon positioning of the "Fire-Normal" manual controller to the "Fire" position. Investigation by the licensee determined that the air-operated solenoid valve, SV-88, associated with the manual control switch was improperly installed and when energized did not permit the air to bleed off and consequently allow the dampers to close. In accordance with SM-3595, the control circuitry for the 'A' and 'C' dampers is modified to close these dampers in parallel with newly installed redundant automatic closing dampers numbers 4 and 5. This design feature was not compromised by the fault identified with SV-88 as determined by the inspector in a discussion with the responsible design engineer. Final determination of the cause for the improperly installed solenoid valve is still under review. Inspector review of final corrective actions and cause determination will be documented in a subsequent report. (84-22-02)

7. Plant Maintenance

- a. During the inspection period, the inspector observed maintenance and problem investigation activities to verify compliance with regulatory requirements, including those stated in the Technical Specifications; compliance with administrative and maintenance procedures; required QA/QC involvement; proper use of safety tags; proper equipment alignment and use of jumpers; personnel qualifications; radiological controls for workers protection; and ascertain reportability as required by Technical Specifications.

b. The inspector witnessed the following maintenance activity:

- Routine maintenance of the 'A' service water pump on October 15, in accordance with Maintenance Procedure (M)-11.10.1, "Minor Inspection of Service Water Pump", Revision 5, February 1, 1984.

8. Construction of Plant Simulator Facility

The licensee is currently involved in the construction of a simulator facility. Ground breaking for the building to house the simulator commenced early this past summer adjacent to the Brookwood Training Center. The building and support facilities is a RG&E Engineering product and is being constructed by RG&E General Maintenance. The simulator hardware and computer software is being provided by Westinghouse and is expected for delivery onsite in February 1986. Once the simulator is operational, projected for early spring 1986, the support staff will consist of three instructors, two engineers, an instrumentation/controls technician and a clerical aide. The simulator is currently planned for the exclusive use of RG&E personnel and primarily for the training and professional development of Ginna licensed operators and trainees.

9. Calorimetric Calculation Error Review

At the request of the New York State Public Service Commission, the licensee conducted a review of the accuracy of the secondary system calorimetric calculation. The licensee determined that the number calculated to represent non-reactor heat inputs was in error in a non-conservative direction by approximately two-tenths of one percent. The calculated non-reactor heat inputs were originally derived from a 1969 plant heat rate test. This value was then converted to a percentile based on the pre-March 1972 licensed power level of 1300 thermal megawatts. When the plant thermal power rating was increased to 1520 thermal megawatts in March 1972, the non-reactor heat inputs were not significantly affected. However, the percent of non-reactor heat inputs was left unchanged in the calorimetric calculations and has consequently been in error since.

Upon reverification of the calculations, the results were determined to be unchanged. Plant power was reduced by .2 percent. The inspector discussed this event with plant management and concluded that the corrective measures taken were satisfactory and that notification of the NRC via a special report would be acceptable. Details of the licensee's review are documented in Kober to Murley letter, dated October 25, 1984. Verification of the licensee's methodology for performing calorimetric calculations will be the subject of further NRC review. (84-22-04)

10. Licensee Event Report (LER's)

The inspector reviewed the following LER to verify that the details of the event were clearly reported, the description of the cause was accurate, and adequate corrective action was taken. The inspector also determined whether further information was required, and whether generic implications were involved. The inspector further verified that the reporting requirements of Technical Specifications and station administrative and operating procedures had been met; that the event was reviewed by the Plant Operations Review Committee and that continued operation of the facility was conducted within the Technical Specification limits.

84-11: Inoperable Rod Position Indicating System

On September 28, control rod G-03 analog rod position indication (RPI) was reading significantly different from the remaining control rods in the bank. In accordance with Technical Specifications 3.10.5.1 and 3.10.5.2, a flux trace was performed to verify the position of rod G-03. Trace results indicated that analog RPI was reading improperly and that the plant computer readout, for which Technical Specifications do not take credit, was properly indicating actual rod positions. A calibration of the analog RPI was conducted and further troubleshooting by the Instrumentation and Control (I&C) technicians was performed to identify the cause for disparity between the computer readout and analog RPI readings. I&C technicians identified what appeared to be erratic output from the two 13 volt RPI power supplies providing biasing voltage to the meter indication operational amplifiers.

The 13 volt power supplies were replaced with a substitute power supply on September 28, which resulted in a temporary loss of all RPI, a condition not specifically addressed by Technical Specifications. NRC staff was informed of the licensee's actions and concurred with the corrective maintenance measures.

Subsequent troubleshooting by I&C determined that the 13 volt power supplies were functioning properly and that the fault may lie in the associated wiring of the power supply sockets. The RPI system was temporarily deenergized again on October 11 in an attempt to isolate the fault. Troubleshooting was unsuccessful and a decision was made by the licensee to continue operation with the substitute power supply until the next outage when operational constraints for troubleshooting will be less restrictive.

The inspector reviewed the safety evaluation performed for the substitute RPI power supply and respective replacement and troubleshooting procedure. In addition, the inspector discussed this event with the licensee and concluded the corrective maintenance measures and controls taken were adequate. The inspector will review final determination of the cause of the fault in a subsequent report. (84-22-03)

11. Review of Periodic and Special Reports

Upon receipt, periodic and special reports submitted by the licensee pursuant to Technical Specification 6.9.1 and 6.9.3 were reviewed by the inspector. This review included the following considerations: the reports contained the information required to be reported by NRC requirements; test results and/or supporting information were consistent with design predictions and performance specifications; and the validity of the reported information. Within the scope of the above, the following report was reviewed by the inspector:

-- Monthly Operating Report for September of 1984.

12. Exit Interview

At periodic intervals during the course of the inspection, meetings were held with senior facility management to discuss the inspection, scope and findings. Based on these discussions the licensee indicated that no proprietary information covered by 10 CFR 2.790 was involved.
