

U. S. NUCLEAR REGULATORY COMMISSION

REGION I

Report Nos. 50-272/88-11
Docket Nos. 50-311/88-11

License Nos. DPR-70
DPR-75

Licensee: Public Service Electric and Gas Company

P. O. Box 236

Hancocks Bridge, New Jersey 08038

Facility Name: Salem Nuclear Generating Station - Units 1 and 2

Inspection At: Hancocks Bridge, New Jersey

Inspection Conducted: March 22, 1988 - May 2, 1988

Inspectors: R. W. Borchardt, Senior Resident Inspector
K. Halvey Gibson, Resident Inspector
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Approved by: *P. D. Swetland*
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Section No. 2B, Projects Branch No. 2, DRP

5/23/88
date

Inspection Summary:

Inspections on March 22, 1988 - May 2, 1988 (Combined Report Numbers
50-272/88-11 and 50-311/88-11)

Areas Inspected: Routine inspections of plant operations including:
followup on outstanding inspection items, operational safety verification,
assurance of quality, maintenance, surveillance, engineered safety feature
walkdown, review of licensee reports, containment integrated leak rate test
results review, and allegation followup.

Results: No violations were cited in this report, however various deficiencies
were identified throughout the period that indicate that some programs are not
being effectively supervised. The inspectors identified instances of poor
equipment maintenance practices, improper wearing of dosimetry, inappropriate
storage of radioactive material, and inattention to procedural details. These
observations are discussed in Sections 4.0, 5.0 and 6.0 of this report.

DETAILS

1. Persons Contacted

Within this report period, interviews and discussions were conducted with members of licensee management and staff as necessary to support inspection activities.

2. Followup on Outstanding Inspection Items (92701)

(Closed) Inspector Followup Item 272/84-04-05; Containment fan cooler unit (CFCU) operation. In January, 1984 the inspector questioned the licensee's operation of CFCUs based upon a CFCU motor failure. Engineering evaluation S-C-M945-NEE-017 was reviewed and concluded that the motor failures were due to reverse rotation in the standby mode, operation of CFCUs at different speeds simultaneously, and frequent fan starts. The inspector has no further questions at this time.

(Closed) Inspector Followup Item 272/84-13-03; Addition of valves to the Technical Specification list of containment isolation valves. Supplemental LER 84-007 identified the need to add certain valves to the Technical Specification (TS) listing of containment isolation valves. The inspector has verified that a license change request has been submitted (dated November 27, 1985) requesting addition of the required valves to T.S. The inspector considers the licensee's action to be complete and this item is closed.

(Closed) Inspector Followup Item 272/84-32-01; Charging/Safety Injection pump failure. On July 13, 1984, the No. 12 Charging/Safety Injection (C/SI) pump seized shortly after being started for surveillance testing. Shortly after this occurrence the inspector reviewed LER 84-17, however this item was opened pending review of a safety evaluation and a supplement to the LER. The inspector reviewed safety evaluation S-2-N600-MSE-298, "Potential consequences of demineralizer resins and metal filings in the RWST and suction piping to the C/SI pumps". The C/SI pump was damaged as a result of metal filings being drawn into the centrifugal pump casing from the RWST. It was determined that the metal filings and some spent resin were in the RWST due to a procedural error in the resin transfer procedures. Corrective actions completed by the licensee included cleaning of the RWST, flushing of piping and correction of applicable procedures. The licensee is aware that a supplement to LER 84-17 is outstanding. Based upon the review of the safety evaluation, the inspector has no further questions regarding this event.

- (Closed) Inspector Followup Item 272/85-07-02; Thermal power indication. The inspector verified that the licensee has the equipment and indication required by technical specifications to provide accurate reactor power indication. A calorimetric calculation is performed daily to verify nuclear instrumentation accuracy.
- (Closed) Inspector Followup Item 272/86-04-01; Inservice Test Program deficiencies. Licensee Event Report 86-02 and recent IST submittals were reviewed and found to be adequate. The inspector has no further questions at this time.
- (Closed) NRC Bulletin 88-01; Defects in Westinghouse Circuit Breakers. This bulletin provided all licensee's with information on Westinghouse series DS breakers and requested inspections of the pole shafts and the breaker closing mechanism alignment. The licensee responded to this bulletin in a letter dated March 31, 1988, which stated that Westinghouse DS/DSL circuit breakers are not used at Salem. No further action is required by this bulletin.
- (Closed) Inspector Followup Item 272/87-33-01; 311/87-34-01; Measurement control evaluation - non radiological chemistry. On completion of the analyses of water samples by the licensee and Brookhaven National Laboratory, a comparison and evaluation was performed. The results are tabulated in Attachment 1 to this report. The anion and metal disagreements and large biases are probably due to the poor calibration procedures that were identified during the previous NRC inspection. The licensee has upgraded the analytical instrumentation. If they correct the weaknesses of their measurement control and calibration procedures as were identified and discussed during the inspection, the licensee will have a good measurement program.

3. Operational Safety Verification (71707, 71709, 71881, 93702)

3.1 Inspection Activities

On a daily basis throughout the report period, inspections were conducted to verify that the facility was operated safely and in conformance with regulatory requirements. The licensee's management control system was evaluated by direct observation of activities, tours of the facility, interviews and discussions with licensee personnel, independent verification of safety system status and limiting conditions for operation, and review of facility records. The licensee's compliance with the radiological protection and security programs was also verified on a periodic basis. These inspection activities were conducted in accordance with NRC inspection procedures 71707, 71709 and 71881 and included weekend and backshift inspections.

3.2 Inspection Findings and Significant Plant Events

3.2.1 Unit 1

Unit 1 entered this report period at 100% power with the No. 13 steam generator primary to secondary leak stabilized at approximately 50 gallons per day (GPD). The leak was originally detected on February 29, 1988 during power ascension testing following the unit's refueling outage. On March 26, the calculated leak rate increased to 75 GPD and on March 27 further increased and then stabilized at approximately 120 GPD. Blowdown samples were being analyzed on a 2 hour frequency.

On March 30, the inservice electro-hydraulic (EH) pump tripped and the standby EH pump failed to start. Operations personnel made repeated attempts to start the standby pump and reset the tripped pump but all efforts were unsuccessful. As EH pressure decreased, the main turbine stop valves began to close causing steam flow and generator electrical output to decrease and reactor coolant temperatures to increase. After it became apparent that the EH system could not be restored, the control room operator manually tripped the reactor. All systems responded properly to the plant trip. A post trip investigation determined that the EH pump trip and inability to return the EH system to service resulted from an EH oil reservoir low level trip signal. Although a reservoir high/low level annunciator was illuminated in the control room previous to this event, the operators believed that it was caused by a high level condition. This belief was based upon a level gage that was later determined to be defective. The reservoir low level condition was caused by a number of relatively minor system leaks at connections throughout the EH system. The existence of these leaks was well known by plant personnel. Although EH fluid had not been added recently, the validity of a high level condition was not questioned. Corrective action taken prior to plant startup included removing the faulty gage and installing a dipstick to measure oil level.

During the outage, an inspection of the No. 13 steam generator U-tubes identified the source of primary to secondary leakage to be the tube located at row 1/column 78. This tube was plugged and no other primary to secondary leaks were identified by the helium sniff method. After the plant startup, measurements and calculations verified that no other U-tube leaks were present.

The inspectors closely monitored the plant transitions between operating conditions including hot standby to cold shutdown, draining the reactor coolant system, mid loop operation, filling and venting the reactor coolant system, and cold shutdown to power operation. These evolutions were well controlled and coordinated. The reactor was taken critical at 8:45 a.m. on April 15, 1988 and synchronized to the grid at 2:21 p.m. Unit 1 was at 100% at the conclusion of the report period.

3.2.2 Unit 2

Unit 2 entered the report period at 100% power and remained at full power until a reactor trip occurred on April 21, 1988. The unit tripped due to a No. 23 reactor coolant loop low flow signal. One of three flow transmitters for the No. 23 reactor coolant loop was being returned to service following maintenance, when a personnel valving error caused a spurious low flow condition to be sensed by one of the two inservice transmitters. The two out of three logic was thereby completed resulting in a reactor trip.

The inspector discussed the cause of the trip with instrument and controls (I&C) supervision and reviewed procedure 2IC-2.5.011 - "Sensor Calibration, 2FT-435 Reactor Coolant Flow - Loop 3 - Channel II". Because the reactor coolant loop flow transmitters are the only transmitters in the plant that use a common sensing line, the return to service valving sequence is unique in that the high pressure side isolation valve must be opened prior to shutting the equalizing valve. This sequence is reversed from that used for transmitters that have separate sensing lines. I&C technicians are trained and qualified to perform these procedures and are aware of the possible consequences (i.e. reactor trip) if the valving is done incorrectly for these particular transmitters. Nevertheless, the I&C technician reversed the two valving steps which caused a slight flow disturbance in the common sensing line and resulted in the trip. The inspector verified that the procedure is explicit in delineating the correct valving sequence and concluded that the technician did not pay attention to the detail of the procedure. The senior I&C supervisor subsequently held a meeting with the I&C technicians and reiterated the station's policy on procedure compliance and paying attention to detail. The inspector has no further questions at this time.

On April 22, 1988, during restart, Unit 2 tripped while synchronizing the main generator to the grid. Steam generator level oscillations resulted from picking up electric load too quickly, and the unit tripped on high No. 23 steam generator water level. The inspector discussed the details of the trip and licensee followup with the reactor operator (RO) involved, the senior shift supervisor (SRO), senior I&C supervision and the Operations Manager. Steam generator level and turbine load chart records were reviewed. An apparent slow response of the turbine electro-hydraulic controls (EHC) in picking up load following closure of the main generator breakers prompted the RO to manually raise turbine load. It is unclear whether this action alone or in combination with a sudden delayed response of the EHC resulted in a swell in the steam generators with the level in No. 23 steam generator reaching the trip setpoint. The turbine load chart indicates that the turbine initially failed to pick up load (i.e. EHC did not respond), however post trip testing of the EHC did not identify any deficiencies in the system. The licensee elected to replace the EHC rate amplifier card based on past experiences in which a failed card resulted in similar faulty EHC response. Although no conclusive cause of the trip could be identified the EHC operated properly throughout the subsequent plant startup. The inspector's review of this event is complete.

The unit was successfully returned to power on April 23 and continued to operate at full power for the remainder of the report period.

3.3.3 Both Units

On March 18, the licensee notified the NRC that an electrical cable designed to supply an alternate source of control and field flash power to the diesel generators was not routed in accordance with the requirements of 10CFR50 Appendix R. The cable was originally installed to compensate for potential damage to the normal control cable due to a postulated fire in a 460V switchgear room. However, because the alternate cable was routed through the same 460V switchgear room, the possibility that a single fire could disable both the normal and alternate shutdown circuits was created. The fire area in question is provided with full area detection and manual CO2 suppression. A fire watch has also been posted since March 1987 for an unrelated reason. The licensee has been directed to respond to this issue in conjunction with the Appendix R violation and civil penalty issued on March 29, 1988.

No violations were identified.

4. Assurance of Quality (71707, 71709)

This inspection report documents the first inspection conducted by the new senior resident inspector and also marks the return of the resident inspector after a 3 month absence. As such, this section presents initial findings and conclusions drawn from observed conditions and activities.

Numerous conditions were identified throughout the period that indicate that some programs are not being effectively implemented. The observations outlined below also lead to a conclusion that plant management and supervision are not holding the work force to the highest standards of performance. Although no serious safety issues were identified, the inspector was concerned that a relatively large number of issues were generated in various functional areas during this period.

During an inspection of station batteries, the inspector found that the Non 1E 250 VDC battery had 4 cells with a water level right at, or slightly below the low level mark and one cell that was approximately 1/2 inch below the low level mark. This battery supplies main turbine auxiliaries and is not safety related. The condition was brought to the licensee's attention and corrected.

The inspector noticed that the location of personnel dosimetry was inconsistent between individuals. Although the commonly accepted correct location is between the neck and waist on the front of the torso the inspector noted many individuals with dosimetry clipped to back belt loops, shirt sleeves and trousers side pockets. The licensee has subsequently issued a memorandum to site personnel describing the correct wearing of dosimetry. This issue will continue to be reviewed during subsequent inspections.

The inspector also identified an improperly posted fire impairment permit in a Unit 1 auxiliary building stairwell. The permit was posted at the wrong penetration and remained posted for nearly one month after work was complete. Records indicate that the work was performed on the correct penetration. The inspector is concerned that workers and supervisors did not question the absence of a posted impairment permit at their work location and that roving firewatches and/or fire protection supervision did not identify the permit discrepancies. This issue was brought to the attention of fire protection supervision who removed the permit and conducted a meeting with fire protection personnel stressing the importance of attention to detail and procedure adherence. The inspector will continue to monitor the fire protection program on a periodic basis.

The inspector noted that the Unit 2 trip on April 21, 1988, discussed in Section 3.2.2 was caused by inattention to detail and failure to follow procedures during the return to service of a reactor coolant loop flow transmitter.

Poor housekeeping practices were also identified. Radioactive material wrapped in yellow plastic being stored in the Unit 1 control room ventilation room was found in a puddle of water. The water was coming from a cooling water valve that had a packing leak. It would have been relatively simple to erect a catch bag under the leaking valve and direct the water to a floor drain, however this was not done. The licensee corrected this condition. Another poor housekeeping practice was observed in the Unit 1 Boron Injection Tank room. A plastic trash can was stored on top of a Limitorque valve motor housing inside of a contaminated area. This discrepancy was corrected.

The maintenance section of this report documents two inspector concerns relating to the content of work packages and the use of "For Information Only" drawings for field work. The surveillance section identifies a concern with the adequacy of supervisory reviews of completed test procedures.

At the inspection report exit meeting the inspector and licensee discussed the fact that these deficiencies may be indicative of inadequate supervisory oversight. The issues discussed above and the licensee's actions to address overall plant performance will be reviewed on a continuous basis by the inspector.

5. Maintenance Observations (62703)

The inspector reviewed the following safety related maintenance activities to verify that the activities were conducted in accordance with approved procedures, technical specifications, NRC regulations, and industry codes and standards.

<u>Work Order Number</u>	<u>Description</u>
880728001	Fisher Vee Ball Valve Inspection.
880223136	Replacement of terminal board in Unit 1 cabinet TP 15-1.
880425107	No. 24 Steam Generator Feedwater Control Valve (24BF19), demand pegged high, recalibrated I/P converter.

<u>Work Order Number</u>	<u>Description</u>
880324060	No. 22 Service Water Strainer, replace carbon steel strainers with aluminum bronze strainers of a new design and add new drain, vent and pressure tap.
880319024	No. 22 Charging Pump inspection, replaced high speed bearings in speed increaser and performed laser alignment.

During the observations of the above activities, two concerns were identified by the inspector. The work order written to conduct preventative maintenance on the Fisher Vee Ball Valve (23SW42 - Diesel Generator oil cooler flow control valve) stated that the inspection was to be performed in accordance with field directive S-C-M600-MFD-218, Revision 0. However, a review of the work package and discussions with the mechanics on the job determined that this directive was not provided by the planning department. Although the mechanics were obviously familiar with the inspection requirements, the field directive should be provided in the work package. During a separate activity, the inspector observed that the technician replacing a terminal board in the Unit 1 relay room cabinet TP 15-1 was utilizing "For Information Only" drawings rather than "Working Copy" drawings as is the normal practice. When questioned about the use of "For Information Only" drawings, the technician stated that "Working Copy" drawings are normally used but that he was using what his supervisor gave him and had not questioned their use. The inspector verified that there were no relevant differences between the "For Information Only" and "Working Copy" drawings. Both of the above concerns were promptly brought to the licensee's attention. The inspector will continue to closely monitor the implementation of the maintenance program during future inspections.

No violations were cited.

6. Surveillance Observations (61726)

6.1 Inspection Activity

During this inspection period the inspector performed detailed technical procedure reviews, witnessed in-progress surveillance testing, and reviewed completed surveillance packages. The inspector verified that the surveillances were performed in accordance with Technical Specifications, licensee approved procedures, and NRC regulations. These inspection activities were conducted in accordance with NRC inspection procedure 61726.

- SP(0)4.6.11A1-I Containment Systems - Primary
 Containment-I
- SP(0)4.1.2.1A&B Reactivity Control Systems - Boration
 Flow Path
- SP(0)4.0.5-P-SW(12) Inservice Testing - No. 12 Service Water
 Pump
- 1IC-2.6-009 Channel Functional Test 1 TE-431A-B, No.
 13 Reactor Coolant Loop Delta T - Tavg
 Protection, Channel III
- Reactor Engineering Manual Part 9 - Moderator Temperature
Coefficient Measurement (MTC)

During review of the licensee's MTC calculations, the inspector identified an error in the averaging of the boration and dilution MTC values in determining the final MTC result. The corrected value is within technical specification limits, however the inspector is concerned that supervisory review which was documented by signature on the test procedure was not adequate in identifying the calculation error.

No violations were cited.

7. Engineered Safety Feature (ESF) System Walkdown (71710)

7.1 Inspection Activity

The inspectors independently verified the operability of selected ESF systems by performing a walkdown of accessible portions of the system to confirm that system lineup procedures match plant drawings and the as-built configuration. This ESF system walkdown was also conducted to identify equipment conditions that might degrade performance, to determine that instrumentation is calibrated and functioning, and to verify that valves are properly positioned and locked as appropriate. This inspection was conducted in accordance with NRC inspection procedure 71710. The Unit 1 Chemical Volume Control and the Unit 2 Containment Spray Systems were inspected and no deficiencies were identified.

No violations were identified.

8. Review of Licensee Reports (90712, 92700)

Upon receipt, the inspector reviewed licensee event reports (LER) as well as other periodic and special reports submitted by the licensee. The reports were reviewed for accuracy and timely submission. Additional followup performed at the discretion of the inspector to verify corrective action implementation and adequacy is detailed with the applicable report summary. The following reports were received and reviewed during the inspection period:

- Unit 1 Monthly Operating Report - March 1988
- Unit 2 Monthly Operating Report - March 1988
- Unit 1 Special Report 87-10 supplies information concerning the flooding of No. 1 service water bay. The inspector verified that NRC concerns delineated in combined special team inspection 272/88-02/311/88-02 were adequately addressed.
- Unit 2 Special Report 88-03, Unit 1 LER 88-008-00 and Unit 2 LER 88-005-00 discuss occurrences of late or missed firewatch surveillances. The inspector reviewed the circumstances of each occurrence and licensee corrective actions and determined that these occurrences collectively constitute a licensee identified violation which is not being cited based upon meeting the criteria of 10CFR2, Appendix C.
- Unit 1 LER 88-004-00 addresses a missed EQ surveillance resulting in No. 11 containment hydrogen analyzer being inoperable during a mode change. Unit 1 LER 88-005-00 addresses a missed sealed source leak check surveillance. The cause of these missed surveillances and others previously reported in LER 311/88-004-00 is poor administrative control when the licensee changed methods for surveillance tracking. Licensee actions to address these issues include a departmental surveillance review by radiation protection (RP) and Chemistry to ensure accuracy and a QA evaluation of the administrative control of surveillances under the new tracking system in general. Licensee control of ensuring the completion of surveillances within the required time is unresolved pending licensee completion and NRC review of the corrective actions delineated above. (UNR 272/311/88-11-01)
- Unit 1 LER 88-006-00 addresses an Appendix R cable design deficiency which is discussed in Section 3.3.3 of this report.
- Unit 1 LER 88-007-00 discusses licensee identification of non-rated fire dampers and duct sections penetrating barriers not having approved coating due to inadequate engineering review of procurement documentation.

The inspector has determined that the corrective actions for previously identified Appendix R deficiencies committed to by the licensee in their response dated April 28, 1988 to the Notice of Violation and Civil Penalty (Inspection Report 311/87-29) should preclude recurrence of deficiencies of this type and concludes that no further action is required.

- Unit 1 LER 88-009-00 addresses a manual reactor trip due to the loss of both EH pumps. The details of this event are discussed in Section 3.2.1 of this report.

9. December 1987 Containment Integrated Leak Rate Test (CILRT) Results Evaluation (70323)

The inspector reviewed the licensee's December 1987 CILRT results documented in accordance with the requirements of 10CFR50 Appendix J paragraph V.B.3. These results were summarized in a technical document entitled "Reactor Containment Building Third/Final Inservice Integrated Leak Rate Test First Ten Year Inspection Interval" attached to the licensee's letter dated March 25, 1988 to the NRC. The report contains a general test description, leakage data, and a summary of results. Both Mass Point (ANSI/ANS-56.8) and Total Time (ANSI N 45.5) calculational methods were employed for the December 1987 CILRT. The total time method of ANSI N 45.4 is consistent with the requirements of the current version of 10CFR50 Appendix J and is the method of record for the test.

The purpose of the test was to demonstrate that leakages through the primary containment building and systems penetrating containment do not exceed that allowed by plant technical specifications. The test was conducted with containment isolation barriers in an "as-left" condition and was witnessed by an NRC regional inspector during a routine safety inspection. The CILRT was followed by a successful verification test and demonstrated acceptable results for the containment with respect to both the "as-left" and "as-found" conditions. Inspection findings are documented in USNRC Region I Inspection Report 50-272/87-38. Pertinent test parameters and results are presented below:

A. Type A Test Parameters

- | | |
|--------------------------|--|
| 1. Test Method | Absolute |
| 2. Calculational Methods | Total Time (ANSI N 45.4)
Mass Point (ANSI/ANS 56.8) |

3. Test Duration:

Stabilization Period 4 hours

Data Gathering for Leakage
Calculation 24 hours

Verification Leak Rate Test 1 hour

4. Test Pressure 63.2 psia (full pressure test)

B. Test Results Wt. %/Day

1. Acceptance maximum
allowable leak rate 0.075

2. Measured (Total Time Method) 0.043
leak rate, Lam at the upper
bound of the 95% confidence
interval

3. Corrections due to water
level changes and Type C
penalties Insignificant

4. Conclusion Acceptable

The inspection concludes that, based on a review of the results, the containment has passed its acceptance criteria in both the "as-left" and "as-found" condition.

No violations were identified.

10. Allegation Followup RI-87-A-127 (71707)

On October 21, 1987, the NRC received an allegation stating that components associated with the charging/safety injection system may have been intentionally damaged to discredit the contractor performing work on associated pipe supports. It was also alleged that quality control (QC) inspectors were identifying an unusually high rate of discrepancies in order to justify an increased work load and overtime. Combined inspection report 50-272/87-32; 50-311/87-33 documents the inspector's review of the licensee's investigation into the component discrepancies. The discrepancies were determined to be caused by poor workmanship and after inspecting the discrepancies, reviewing the licensee report, and interviewing licensee and contractor personnel, the inspector concluded that the subject components were not intentionally

damaged. The inspector also reviewed the investigation of QC inspection findings and work hours. The inspection findings were well documented by written surveillance reports and photographs. Records indicate that the QC findings were well justified and that the amount of overtime was appropriate and controlled within nuclear department limits. The inspector concluded that no safety concern exists and that the allegations are unsubstantiated.

11. Exit Interview (30703)

The inspectors met with Mr. J. Zupko and other licensee personnel periodically and at the end of the inspection report to summarize the scope and findings of their inspection activities.

Based on Region I review and discussions with the licensee, it was determined that this report does not contain information subject to 10 CFR 2 restrictions.

ATTACHMENT 1

Salem Units 1 and 2 Split Samples

	<u>BNL</u>	<u>Salem</u>	<u>Ratio</u>	<u>Comparison</u>
Chloride(ppb)-RWST+1mlSpike	62.6 \pm 1.7	80.0 \pm 8	1.28 \pm 0.13	Disagreement
Chloride(ppb)-RWST+0.5mlSpike	35.8 \pm 1.7	46.0 \pm 5	1.28 \pm 0.15	Agreement
Sulfate(ppb)-RWST+1mlSpike	96.3 \pm 4.0	86.0 \pm 8	0.89 \pm 0.09	Agreement
Sulfate(ppb)-RWST+0.5mlSpike	79.3 \pm 3.6	73.0 \pm 7	0.92 \pm 0.10	Agreement
Fluoride(ppb)-RWST+1mlSpike	47.9 \pm 1.1	56.0 \pm 3	1.17 \pm 0.07	Disagreement
Fluoride(ppb)-RWST+0.5mlSpike	30.2 \pm 1.4	32.0 \pm 2	1.06 \pm 0.08	Agreement
Iron(ppb)Aux.FeedTank+1mlSpike	499 \pm 2	517 \pm 59	1.04 \pm 0.12	Agreement
Iron(ppb)Aux.FeedTank+0.5mlSpike	242 \pm 2	250 \pm 44	1.03 \pm 0.18	Agreement
Copper(ppb)Aux.FeedTank+1mlSpike	516 \pm 1	523 \pm 51	2.01 \pm 0.10	Agreement
Copper(ppb)Aux.FeedTank+0.5mlSpike	258 \pm 1	260 \pm 45	1.0	Agreement
Nickel(ppb)Aux.FeedTank+1mlSpike	573 \pm 0	530 \pm 32	0.92 \pm 0.06	Agreement
Nickel(ppb)Aux.FeedTank+0.5mlSpike	343 \pm 0	300 \pm 18	0.87 \pm 0.05	Disagreement
Chromium(ppb)Aux.FeedTank+mlSpike	523 \pm 5	480 \pm 84	0.92 \pm 0.16	Agreement
Chromium(ppb)Aux.FeedTank+0.5ml Spike	272 \pm 0	250 \pm 44	0.92 \pm 0.16	Agreement
Hydrazine(ppb)	547 \pm 7	550 \pm 20	1.01 \pm 0.04	Agreement
Ammonia(ppb)	515 \pm 40	510 \pm 31	0.99 \pm 0.10	Agreement