

U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Report No. 50-454/84-73(DRS)

Docket No. 50-454

License No. NPF-23

Licensee: Commonwealth Edison Company  
Post Office Box 767  
Chicago, Illinois 60690

Facility Name: Byron Station, Unit 1

Inspection At: Byron Site, Byron, Illinois

Inspection Conducted: October 2 through November 6, 1984

Inspectors: *M. Ring*  
M. Ring 11/23/84  
Date

*D. Williams*  
D. Williams 11/23/84  
Date

*R. Ferrell*  
R. Ferrell 11/23/84  
Date

*C. VanDenburgh*  
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*D. Butler*  
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Approved By: *J. Harrison*  
J. Harrison, Chief 11/23/84  
Engineering Branch Date

## Inspection Summary

Inspection on October 2 through November 6, 1984 (Report No. 50-454/84-73(DRS))

Areas Inspected: Routine, announced inspection to review licensee action on previous inspection findings; preoperational test procedure verification; preoperational test results; preoperational test results verification; and startup test procedures. The inspection involved 369 inspector-hours onsite and 77 inspector-hours in office by nine inspectors including 58 inspector-hours onsite during off-shifts.

Results: Of the five areas inspected, three items of noncompliance were identified in two areas (failure to perform adequate test results review - Paragraphs 4.d and 4.e and failure to specify correct retesting which is documented in licensee action on previous inspection findings - Paragraph 2.s).

## DETAILS

### 1. Persons Contacted

- \*V. Schlosser, Project Manager, Byron
- \*R. Querio, Station Superintendent
- \*T. Maiman, Manager of Projects
- \*R. Ward, Assistant Superintendent, Administrative and Support Services
- \*D. St. Clair, Technical Staff Supervisor
- \*R. Wegner, Technical Staff
- \*P. Anthony, Technical Staff
- \*S. Dresser, Technical Staff
- \*L. Sues, Assistant Superintendent, Maintenance
- \*G. Stauffer, Station Nuclear Engineer
- \*W. Burkamper, QA Supervisor, Operations
- \*D. Sible, QA Engineer

\*Denotes those personnel present at the exit interview.

Additional station technical and administrative personnel were contacted by the inspectors during the course of the inspection.

### 2. Licensee Action on Previous Inspection Findings

- a. (Closed) Open Item (454/83-40-06): Final evaluation of the CILRT results after adjustments due to system configuration deviations during the conduct of the test. The inspector reviewed the CILRT results adjusted for system configuration deviations and determined that the unit containment leakage was adjusted to a leakage of 0.031 w %/day. The adjusted value is less than the maximum allowed leakage of 0.1 w %/day and is therefore acceptable.
- b. (Open) Unresolved Item (454/84-07-07(DRS)): This item involved a possible unmonitored failure related to a blown fuse in the control circuitry of protection circuits which energize to actuate. There are five such circuits: Containment Spray, Power Operated Relief Valve (PORV) Interlock, Reactor Coolant Loop Stop Valve Interlock, Residual Heat Removal (RHR) Valve Interlock and Reactor Water Storage Tank (RWST) Lo-Lo Interlock. In order to prevent the unmonitored failure of these circuits, the licensee in conjunction with Westinghouse, has developed a modification to the present technical specification surveillance which will detect the blown fuse in the control circuitry. This will be accomplished by verifying output bistable actuation or LED energization on an output test circuit. Technical Specifications presently require that a surveillance be performed every 18 months for each of the five circuits and once every 31 days for the Containment Spray and PORV Interlock circuits. The licensee has initiated Action Item Record (AIR) 6-84-547 to require that these surveillances be modified prior to their next use and that the output fuse integrity for each circuit be verified prior to fuel load. This will ensure that an unmonitored failure does not exist prior to fuel load and

on the present surveillance frequency. The inspector contacted NRR (L. Olshan), who concurred that the present surveillance periodicity is satisfactory to detect the failure of these protection circuits. This item will remain open pending completion of the surveillance procedure modifications.

- c. (Closed) Noncompliance (454/84-16-01(DE)): This item involved inadequate implementation of the test program and listed six examples. Subsequently inspection report 454/84-38 noted that the RC 63-10 test, "Integrated Hot Functional (IHF)", contained similar inadequate results review problems and this test was added to the scope of the licensee's corrective actions. The inspector reviewed the licensee's response and corrective actions contained in two letters dated May 18 and June 14, 1984, from D. Farrar to J. Keppler. The inspector also reviewed Technical Staff Supervisor memoranda 10, 7a and 35a referenced in the licensee's corrective actions. The inspector reviewed several retests (primarily R-241, "Pressurizer PORV Leak Check,") associated with RC 63.10 results review items and the related licensee correspondence which documented retesting and results review and approval for the IHF testing. During the course of review of other preoperational tests to verify the adequacy of the corrective action for this noncompliance, the inspectors identified one test, AB 1.10, "Boric Acid," where the corrective action appeared inadequate. The circumstances surrounding this instance are described in paragraph 4.e of this report. Other than the above item, the inspectors determined the corrective actions affected by the licensee should be adequate to prevent further violations, therefore this item is considered closed.
- d. (Closed) Open Item (454/84-24-01(DE)): This item involved the development by the licensee of a surveillance program for valves which are required to be stroke time tested by the technical specifications. The inspector has reviewed the Technical Staff Surveillance procedures and determined that an adequate program exists to require and perform valve stroke time testing. This item is considered closed.
- e. (Closed) Open Item (454/84-24-02(DE)): This item involved the completion of the review and approval of the results of RC 63.10, "Hot Functional" by Project Engineering. This review has been performed and provided to the inspector. This item is considered closed.
- f. (Closed) Open Item (454/84-24-03(DE)): This item involved the completion of a review by Quality Assurance (QA) of the results of preoperational test RC 63.10, "Integrated Hot Functional". The licensee has subsequently completed the review by QA. The inspector reviewed surveillance QAS-06-84-223 which documented the results of this review and considers this item closed.

- g. (Closed) Unresolved Item (454/84-38-02(DRS)): This item addressed the potential conflict between the Byron FSAR and the test results of HC 39.10, "Containment Polar Crane". The Byron FSAR originally stated the maximum speeds for the bridge, trolley, main hoist and auxiliary hoist in the answer to NRC question Q10.6. The high end of the expected ranges in all four cases and the recorded speeds in three cases exceeded the maximum allowable in the FSAR. The licensee has revised the commitment to the Byron FSAR on page Q10.6-1 such that the speeds listed are now nominal speeds and not maximum. The inspector contacted the Licensing Project Manager (J. Stephenson) from the Office of Nuclear Reactor Regulation (NRR) and was informed the change would be acceptable. This item is considered closed.
- h. (Closed) Open Item (454/84-38-03(DRS)): This item involved the testing of a temporary bubbler system in RF 66.10, "Containment Floor Drains". The temporary system has been removed and the permanent bubbler system has been installed (Construction Work Request RF-0003). The licensee has performed Component Demonstration C-182 to test the permanent bubbler system which the inspector has reviewed and found acceptable. This item is considered closed.
- i. (Closed) Open Item (454/84-49-02(DRS)): This item involved verification that closing of either of the reactor trip bypass breakers would produce a general warning alarm. The licensee has subsequently written, performed and approved Component Demonstration C-165 which verifies this specific attribute of the reactor protection system. The inspector reviewed the results of this test and considers this item closed.
- j. (Closed) Open Item (454/84-49-03(DRS)): This item involved the development of instructions and definitions for the use of such terms as "pump head". The licensee has subsequently issued Tech Staff Memo T-047 entitled, "Pump Performance Analysis Information," which defines total dynamic head and describes the data necessary to analyze pump performance. Additionally the licensee has conducted training sessions with pertinent personnel on pump performance analysis. This item is considered closed.
- k. (Closed) Open Item (454/84-49-05(DRS)): This item addresses the potential conflict between the Byron FSAR and the test results of the PS 61.11, "Process Sampling - Hydrogen Monitors". The Byron FSAR states that Teledyne Analytical Instruments hydrogen analysis will provide a higher hydrogen concentration than actual. Test results showed that the actual hydrogen concentration was higher than the measured. Reviewing the equations used to calculate the actual hydrogen concentration shows that under accident conditions the actual hydrogen concentration will be less than measured concentration. During the test, due to plant computer corrections for post accident LOCA conditions (humidity) inside containment the actual hydrogen concentration was greater than measured. The Byron FSAR will be amended to clarify the exception to this statement when using dry hydrogen gas during testing. This item is considered closed.

- l. (Closed) Open Item (454/84-56-01(DRS)): Inspector comments related to initial core loading procedures. The licensee revised their initial core loading procedures to address the inspector's comments. The inspector reviewed these revisions and this item is considered closed.
- m. (Closed) Open Item (454/84-56-02(DRS)): This item involved vague or potentially misleading statements in startup test procedures to be used for exiting from the test procedures in the event of an abnormal occurrence. The licensee has subsequently developed a set of generic exiting statements which basically turnover control to the appropriate licensed operating individuals who would be expected to respond using operating or emergency procedures as required. The inspectors have no further concerns in this area.
- n. (Closed) Open Item (454/84-57-01(DRS)): Procedure BOS 4.6.2.1.d-1, Revision 1, "Reactor Coolant System Water Inventory Balance" did not make reference to consider any identifiable leakage that could occur during the performance of the surveillance. In addition, the data sheet did not provide the necessary information to demonstrate that the acceptance criteria had been met. The inspector reviewed BOS 4.6.2.d-1, Revision 1, "Reactor Coolant System Water Inventory Balance Surveillance". The licensee added precautions to terminate any draining or sampling activities during the performance of the surveillance. Provisions were added to the data sheet to calculate gross, identified and unidentified leak rates. This will provide the necessary information to prove technical specification acceptance criteria has been met. This item is considered closed.
- o. (Closed) Open Item (454/84-57-02(DRS)): Instruments 1LT-112/185 and 1FT-110/111 had different calibration frequencies than the other test instruments used to perform surveillance BOS 4.6.2.1.d-1, Revision 1, "Reactor Coolant System Water Inventory Balance Surveillance". The inspector verified the change in calibration frequency by review of BIP 2000-T0, Revision 1, "CECo Test Report Byron Station". The licensee changed the calibration frequency of 1LT-112/185 and 1FT-110/111 from 208 to 78 weeks which conforms to the calibration frequencies of the other test instruments used in the surveillance test. This action was considered acceptable and this item is closed.
- p. (Closed) Unresolved Item (454/84-64-01(DRS)): This item involved verification of FSAR Table 14.2-6 statement that the individual protection channels will be tested to demonstrate safe failure on loss of power. The licensee subsequently wrote, performed and approved the results of retest R-269, "Reactor Protection" wherein safe failure on loss of power was demonstrated for each of the individual protection channels. The inspector has reviewed the results of R-269 and this item is now considered closed.

- q. (Closed) Unresolved Item (454/84-64-02(DRS)): This item involved verification of proper load group assignment and independence between channels for the reactor protection system. The licensee has subsequently written, performed and approved the results of retest R-269, "Reactor Protection", wherein independence between channels and proper load group assignment was verified. The inspector has reviewed the results of R-269 and this item is now considered closed.
- r. (Closed) Unresolved Item (454/84-64-04(DRS)): This item concerned the Technical Specification (TS) requirement for minimum diesel generator fuel oil storage capacity. The inspector determined that the proposed technical specification limit of 42000 gallons could not be supported by the preoperational test data obtained in DG 22.10. It was determined that the Project Engineering Department reviewed and approved the results of DG 22.10 based on a proposed TS limit at that time of 47000 gallons. As a process of their validation of the present proposed technical specifications, Project Engineering has recommended that the TS limit for the 1A and 1B diesel generators be revised to 44000 gallons. This value is supported by preoperational test data and has been discussed with NRR (C. Moon). Based upon the above, this item is considered closed.
- s. (Closed) Unresolved Item (454/84-64-05(DRS)): This item has been upgraded to an item of noncompliance. The item originally concerned the retesting of the diesel generator day tank storage capacity. Paragraph 9.5.4.1 of the Byron FSAR requires that sufficient fuel oil storage capacity be provided in the Diesel Oil Day Tank to allow the diesel generator to run fully loaded for 72 minutes. DG 22.10 verified this capacity by fully loading the diesel generator and ensuring that 72 minutes running time is available after the technical specification limit of 450 gallons is reached. This test was originally performed satisfactorily. However, following the performance of this testing, deficiency 1601 (AAA) was written because an overflow fuel line from the day tank was not installed. Based upon this, the licensee performed and approved retesting in the form of Component Demonstration C-46 to show that sufficient day tank storage capacity existed. However, the test method of C-46 did not require that the 72 minute timing interval begin at the low level alarm corresponding to the technical specification limit of 450 gallons. Because of this, the retesting of C-46 did not verify that sufficient fuel oil was available in the Diesel Oil Day Tank to meet the design basis of the FSAR.

Further discussions with the licensee have determined that Component Demonstration C-46 was not necessary to close deficiency 1601 (AAA) because the installation of the overflow line did not effect the results of the 72 minute run. A functional check to run the diesel generator for a 24 hour load test was sufficient to verify that the overflow line was installed satisfactorily and deficiency 1601 (AAA) could have been closed without the performance of C-46. However, it was also determined that deficiencies 2548 and 2549 were closed

based upon the functional check of a 24 hour load test. The resolution of these deficiencies required the rerouting of fuel drain lines from the diesel oil day tank to the storage tank. This work does effect the results of the 72 minute run such that the required, retesting should have been the performance of C-46. Although the resolution of deficiency 1601 (AAA) did not require the performance of C-46 and the deficiency was properly cleared by functional testing, deficiencies 2548 and 2549 were improperly closed based on a functional retest and should have required the performance of C-46. Since C-46 was required to be performed and it did not verify that sufficient day tank storage capacity existed following the rerouting of the fuel oil drain lines, the design basis of the FSAR as stated in paragraph 9.5.4.1 was not verified by preoperational testing. This is considered to be an item of noncompliance (454/84-73-01(DRS)). Following discussions with the inspector concerning this item, the licensee has satisfactorily developed, performed and approved Component Demonstration C-190 to verify the capacity of the 1A and 1B Diesel Oil Day Tanks. Based on the above this item is considered closed.

- t. (Closed) Unresolved Item (454/84-64-07(DRS)): This item involved a hairline crack on a cold leg injection line noted during preoperational test EM 28.12. The licensee has subsequently replaced the three similar lines and completed a metallurgical analysis of the failure mechanism of the first line. Details of the analysis are documented in inspection report 454/84-71. This item is therefore considered closed.
- u. (Open) Open Item (454/84-64-08(DRS)): This item involved a design change to correct the physical orientation of source range nuclear instrument cables so as not to interfere with drawer opening and closing. During the course of this inspection, the inspectors determined that the design change had been cancelled and then was reinstated. The item remains open pending completion of the design change.
- v. (Closed) Open Item (454/84-64-09(DRS)): This item involved two startup procedures, PS 61.31, "Effluent Monitors and Failed Fuel Monitor Checks," and RC 63.35, "Shutdown from Outside the Control Room," which were discussed in the FSAR but were not included in the various startup sequencing procedures. The inspector has reviewed a draft of revision 2 to TG 80.33, "Test Sequence at 30% Power," which now sequences the performance of the above two tests, found the procedure to be adequate and the item is now considered closed.

### 3. Preoperational Test Procedure Verification

The inspectors reviewed the following preoperational test procedures against the FSAR, SER, proposed Technical Specifications and Regulatory Guide 1.68.

PR 60.15, "Process Radiation Monitoring - Loop 5"  
PR 60.11, "Process Radiation Monitoring - Loop 1"  
PR 60.12, "Process Radiation Monitoring - Loop 2"  
RP 60.13, "Process Radiation Monitoring - Loop 3"  
PR 60.16, "Process Radiation Monitoring - Wide Range Gas Monitors"  
VX 99.10, "Switchgear Heat Removal"  
VC 85.10, "Control Room Ventilation"

No items of noncompliance or deviations were identified.

#### 4. Preoperational Test Results Evaluation

The inspectors reviewed the results of the below listed preoperational test procedures to verify all test changes were identified and approved in accordance with administrative procedures; all test deficiencies were appropriately resolved, reviewed by management and retested as required; test results were evaluated by appropriate engineering personnel and specifically compared with acceptance criteria; data was properly recorded, signed, dated and documented as test deficiencies if out of tolerance, test packages were reviewed by QA for adequacy of contents; and test results were approved by appropriate personnel:

SI 73.13, "Safety Injection - ECCS Check Valve Operability and Leakage"  
AP 5.11, "Auxiliary Power - Bus Loading and Independency"

Hot Functional Retests:

R241, "Pressurizer PORV Leak Check"  
R259, "Cold Leg Stop Valve Interlocks"  
R233, "Steam Generator PORV Operability"  
R183, "1FCV-121 Minimum Output Check"  
R171, "1FCV-121 Operability"  
R161, "PDP Maintaining Pressurizer Level"  
R184, "PDP Minimum Output Check"  
R193, "Pressure Drop Across the CV Demineralizers"  
R245, "Pressurizer Pressure Control"

AB 1.10, "Boric Acid"

MS 51.10, "Main Steam Isolation Valves"

Retest R-269, "Reactor Protection"

Component Demonstration C-190, "Diesel Generator"

VE 128.10, "Miscellaneous Electric Equipment"

AP 5.10, "Auxiliary Power"

PC 58.11, "Primary Containment-A Leak Rate"

PC 58.10, "Primary Containment-B & C Leak Rate"

EF 26.12, "Essential Safety Features - Logic and Time Response"

- a. With respect to the results of PC 58.10, the inspectors had not completed the review at the time of the exit and this review will be documented in a later inspection report.
- b. With respect to the results of EF 26.12, the inspectors noted the time response for valves 1CV112D and 1CV112E were greater than the expected value of 12 seconds. The licensee had identified this fact and approved the results on the basis that FSAR Table 6.3-1 allows

up to 15 seconds for valves of this size. The inspectors pointed out that this would appear to be in conflict with the statement on page 6.3-21 of the FSAR which indicates high head Safety Injection valves will be in their final position and the pump is assumed to be at full speed in 12 seconds. The licensee is reviewing this question and the subject will be followed as an unresolved item (454/84-73-02(DRS)). In addition, the Auxiliary Building Ventilation System (VA) was not complete at this time and the licensee has been granted a deferral until power operations for the preoperational testing of this system. Time response testing relative to VA is being followed by the Resident Inspector's open item (454/84-70-01).

- c. With respect to the results of AP 5.10, the inspector had the following comments:

The inspector noted ten instances in which the test performance was not in conformance with the requirements of the Byron Startup Manual. These examples were in addition to the six items discussed in the Test Review Boards evaluation. The specific items involved:

- . deletion of a test steps without a test change
- . typographical corrections which should be test changes
- . test steps which have not been initialled

The inspector noted that this instance of failure to follow administrative controls actually occurred in approximately the same time frame as a previously noted failure in the same area for which the licensee was cited for an item of noncompliance (454/83-58-01b). In response to that noncompliance, the licensee instituted corrective actions to prevent further occurrences. The inspector has previously reviewed preoperational tests performed or reviewed subsequent to the implementation of corrective actions and is satisfied that successful corrective action was implemented to prevent reoccurrence. The inspector has no further concerns with this procedure.

- d. With respect to the results of SI 73.12, the inspectors noted the following problems:

(1) The licensee wrote, performed and approved the results of retest R-248 to SI 73.13 which stated in acceptance criterion 4.2, "The following four pairs of valves shall have a combined leakage for the four pairs of less than 10.0 gpm:

- (a) ISI 8956A and ISI 8948A
- (b) ISI 8956B and ISI 8948B
- (c) ISI 8956C and ISI 8948C
- (d) ISI 8956D and ISI 8948B"

Acceptance criterion 4.1 from the original SI 73.13 test required each of the above valves to have a maximum leakage of 1 gpm. However, all four 8948 valves failed this criterion in the initial performance of SI 73.13. Retest R-248 also

required less than 1 gpm for the 8948 valves in criterion 4.1. Since the 8956 valves had passed the original test criterion they were not included in the retest acceptance criteria except in 4.2 as quoted above. By writing the acceptance criterion 4.2 to look at a combination of pairs of valves, the test could allow values which would meet criterion 4.2 but exceed the requirements of Technical Specification 3.4.6.2.f. Technical Specification 3.4.6.2.f. (which was still in a proposal status at the time of performance and review of SI 73.13 and R-248) requires less than 1 gpm for each of the check valves listed above. Further, from the retest results one of the valves, 1SI 8956D, leaked at a rate of .61 gpm which when corrected for pressure exceeds the 1.0 gpm criterion of the Technical Specification. Approval of the results of SI 73.13 and R-248 using an acceptance criterion which allowed a value in excess of that allowed by Technical Specifications is considered to be a violation of 10 CFR 50 Appendix B Criterion XI and an example of an item of noncompliance (454/84-73-03a(DRS)).

- (2) Byron Technical Specification 3.4.6.2.f requires each Reactor Coolant System Pressure Isolation Valve leakage be demonstrated to be less than 1.0 gpm at a Reactor Coolant System pressure of  $2235 \pm 20$  psig. The specification allows for testing at reduced pressure providing the results are adjusted up to 2235 psig assuming the leakage to be directly proportional to pressure differential to the one-half power. This method of performing a reduced pressure test and then adjusting the results is the same as required by the ASME Code Section XI Subsection IWV, "Valve Leak Rate Test". Instead, the licensee performed reduced pressure tests on the Safety Injection (SI) System check valves in SI 73.13 and retest R-248 but did not adjust the results to system functional pressure (2235 psig). When the adjustment is applied, seven valves, 1SI8956D, 1SI 8819A, 1SI 8819B, 1SI 8819C, 1SI 8819D, 1SI 8900A and 1SI 8900B exceed 1.0 gpm and therefore would not satisfy Technical Specification 3.4.6.2.f. Failure to correctly evaluate the results of SI 73.13 and R-248 by adjusting for pressure is considered to be a violation of 10 CFR 50 Criterion XI and an example of an item of noncompliance (454/84-73-03b(DRS)). It should also be noted that performance of the Technical Specification Surveillance for these valves has already been added as a condition to the Byron operating license.

- e. With respect to the results of AB 1.10, the inspectors noted that the licensee utilized pump curves for the Boric Acid Transfer Pumps and the Recycle Evaporator Pumps that did not include suction pressure (or dynamic effects) but relied solely on discharge pressure. The vendor's curve, however, utilized discharge pressure minus suction pressure. This discrepancy was not discussed in the documented test evaluation. Previously, in inspection report No. 454/84-16, the licensee had been issued an item of noncompliance for a similar instance of using discharge pressure solely as a basis for evaluating

pump curves. The corrective action for that noncompliance failed to identify or correct this instance of incorrect evaluation of pump curves in AB 1.10. Failure to adequately evaluate the results of AB 1.10 or to take complete corrective action for noncompliance 454/84-16-01 is considered to be a violation of 10 CFR 50 Criterion XI and XVI and an item of noncompliance (454/84-73-04(DRS)). Subsequent to the inspector raising this issue, the licensee reperformed the evaluation using the correct curves and demonstrated the pumps are adequate to fulfill their design function. The inspectors have reviewed this information and now consider the noncompliance closed.

No other items of noncompliance or deviations were identified.

5. Preoperational Test Results Verification

The inspectors reviewed the following preoperational test procedures and verified that results were reviewed against approved acceptance criteria and an evaluation of the test results had been performed in accordance with Regulatory Guide 1.68 and the licensee's Startup Manual:

PR 60.15, "Process Radiation Monitoring - Loop 5"  
PR 60.11, "Process Radiation Monitoring - Loop 1"  
PR 60.12, "Process Radiation Monitoring - Loop 2"  
PR 60.13, "Process Radiation Monitoring - Loop 3"  
PR 60.16, "Process Radiation Monitoring - Wide Range Gas Monitors"  
LM 133.10, "Loose Parts Monitoring"  
VX 99.10, "Switchgear Heat Removal"  
EM 28.10, "Primary Thermal Expansion"  
VC 85.10, "Control Room Ventilation"

No items of noncompliance or deviations were identified.

6. Startup Test Procedure Review

The inspectors reviewed the below listed startup test procedures against the Final Safety Analysis Report (FSAR), Safety Evaluation Report, applicable Regulatory Guides and Standards, and portions of 10 CFR 50.

RY 69.30, Rev. 1 (draft), "Pressurizer Sprays, Heaters and Bypass Flow Adjustments"  
NR 52.32, Rev. 2 (draft), "Initial Criticality"

The inspectors also commenced reviews of several additional startup test procedure drafts which will be completed once approved copies of the startup test procedures are available. These reviews will be documented in a subsequent inspection report.

- a. With respect to the results of draft procedure RY 69.30, the inspector had the following comments:

- (1) The procedure did not contain steps to address:
  - (a) pressurizer spray line low temperature alarm setpoint adjustment.
  - (b) placing the pressurizer level control in manual in Section 9.2, prior to initiating the pressurizer spray effectiveness transient.
  - (c) restoring the pressurizer level control to automatic following the pressurizer heat effectiveness transient.
  - (d) filling out Data Sheet 11.3.6
- (2) The expected value given as an acceptance criterion for pressurizer pressure in Data Sheet 11.3.9 was  $2000 \pm 25$  psig. It should have been approximately 2300 psig.
- (3) Data Sheet 11.3.5 required that a value be listed for Heater Power Input (kW) which is not possible at that point in the procedure.
- (4) Step 9.3.5 referred to Data Sheet 11.3A. The procedure does not contain a Data Sheet 11.3A. (Per discussion with members of the technical staff, the correct reference would be Data Sheet 11.3.5.)
- (5) Data Sheets 11.1.4D and 11.1.4E were incorrectly titled "...valve position 3/4 turn open" whereas the data being recorded on these sheets was for valve positions 1 turn open and wide open, respectively.
- (6) Data Sheet 11.3.5 which is used to record pressurizer heater effectiveness data was improperly titled "Pressurizer Spray Effectiveness".
- (7) Recorder 1 TR 433B was listed on data sheets 11.1.3, 11.1.4, 11.1.8 and 11.1.9 as the recorder to use to obtain Loop Temperature data. However, the loop for which temperature is being recorded on Data Sheets 11.1.3 and 11.1.4 is different from the loop for which temperature is being recorded on Data Sheets 11.1.8 and 11.1.9. (Per discussion with members of the technical staff, Recorder 1 TR 433B has two pens. One of these pens should be used for Data Sheets 11.1.3 and 11.1.4 and the other pen for Data Sheets 11.1.8 and 11.1.9. The licensee agreed to provide a clarification which would include a pen number in addition to the recorder number.)

At the time that the inspectors discussed the above comments with the licensee, comments a.(1)d, a.(4) and a.(5) had been identified in a PED review transmittal letter from G. T. Klopp, Byron Project Licensing Engineer to R. E. Querio, Byron Station Superintendent, dated October 10, 1984. Since the station technical staff had just recently received the letter, the comments in the letter had not yet been incorporated into the procedure.

b. With respect to the results of draft procedure FH 52.32, the inspector had the following comments:

- (1) Regulatory Guide 1.68, Rev. 2 states that "...startup channels... signal to noise ratio should be known to be greater than two" for initial criticality. This requirement was not addressed in any startup procedure draft at the time that the inspector discussed this with members of the licensee's technical staff.
- (2) Procedure FH 52.32 did not contain any steps concerning boron sampling. Discussion with the System Test Engineer revealed that the System Test Engineer was aware of this omission and had incorporated a requirement for boron sampling into his working copy of draft procedure FH 32.33 "Initial Criticality and Low Power Test Sequence". The System Test Engineer also indicated that the frequency of the boron sampling, as indicated in his working draft, was currently being evaluated and was subject to change.

Incorporation of the licensee's resolution to the comments contained in paragraphs a. and b.(2) above into approved procedures, and subsequent inspector review is considered an open item (454/84-73-05(DRS)).

The comment discussed in paragraph b.(1) above is considered an unresolved item (454/84-73-06(DRS)) pending receipt of approved startup test procedures and subsequent NRC review.

No items of noncompliance or deviations were identified.

7. Initial Core Load - Fuel Transfer Tube

FSAR Section 14.10 contains a statement which says "The refueling cavity is dry during initial core loading." Since the licensee intended to fill the fuel transfer tube, which inevitably causes a small portion of the refueling cavity to be filled, R. A. Becker, the Nuclear Reactor Regulations FSAR Chapter 14 reviewer for Byron, was contacted to evaluate whether or not this condition would be considered contradictory to the FSAR. It was R. A. Becker's interpretation that filling the fuel transfer tube and the corresponding portion of the refueling cavity would not constitute a contradiction of the above FSAR statement.

No items of noncompliance or deviations were identified.

8. Open Items

Open items are matters which have been discussed with the licensee which will be reviewed further by the inspectors, and which involved some action on the part of the NRC or licensee or both. An open item disclosed during the inspection is discussed in Paragraph 6.

9. Unresolved Items

Unresolved items are matters about which more information is required in order to ascertain whether they are acceptable items, items of noncompliance or deviations. Unresolved items disclosed during the inspection are discussed in Paragraphs 4.b and 6.

10. Exit Interview

The inspectors met with licensee representatives denoted in Paragraph 1 at the conclusion of the inspection on November 2, 1984. The inspectors summarized the scope of the inspection and the findings including the items of noncompliance denoted in paragraphs 2.s, 4.d and 4.e. Subsequent to the exit, the inspectors completed additional test procedure results reviews which resulted in the unresolved item in paragraph 4.b. This item was communicated to members of the licensee's staff on November 3 and to the Technical Staff Supervisor via telephone on November 7.