APPENDIX

U. S. NUCLEAR REGULATORY COMMISSION
REGION IV

NRC Inspection Report: 50-267/83-06 License: DPR-34

Docket: 50-267

Licensee: Public Service Company of Colorado (PSCo)
P. O. Box 840
Denver, CO 80201

Facility Name: Ft. St. Vrain Nuclear Generating Station (FSV)

Inspection At: Platteville, Colorado

Inspection Conducted: February 28-March 4, 1983

Inspector: Wesley L. Holley 5/10/83
W. L. Holley, Radiation Specialist, Facilities Radiation Protection Section — Date

Approved: Blaine Murray 5/10/83
Blaine Murray, Chief, Facilities Radiation Protection Section — Date

T. F. Westerman 5/13/83
T. F. Westerman, Chief, Reactor Project Section A — Date

Inspection Summary

Inspection Conducted February 28-March 4, 1983 (Report 50-267/83-06)

Areas Inspected: Routine, unannounced inspection by a regional based inspector of the licensee's radwaste program including: liquid and gaseous radioactive effluent releases; records and reports of radioactive effluents; effluent control instrumentation; procedures for controlling the release of effluents; testing of air cleaning systems; reactor coolant quality; licensee audits of radwaste activities; radiochemistry organization; health physics organization; and solid radioactive waste. The inspection involved 33 onsite hours by one NRC inspector.

Results: Within the areas inspected, no violations or deviations were identified. One new unresolved item is discussed in paragraph 3.

Details

1. Persons Contacted (FSV)

Principal Licensee Personnel

*D. W. Warembourg, Manager, Nuclear Production
*T. Borst, Radiation Protection Manager
M. J. Ferris, Quality Assurance Coordinator
C. H. Fuller, Technical Services Engineering Supervisor
*J. W. Gahm, Quality Assurance Manager
*F. D. Hill, Station Manager
V. J. McGaffic, Chief Radiochemist
P. F. Moore, Quality Assurance Technical Support Supervisor
T. E. Schleiger, Health Physics Supervisor
*L. Singleton, Quality Assurance Operations Supervisor
*H. R. Starnes, Construction Coordinator
W. E. Woodard, Plant Health Physicist

Other Personnel

*M. W. Dickerson, Senior Resident Reactor Inspector, USNRC

The NRC inspectors also interviewed several other licensee employees including health physics technicians, radiochemistry technicians, and administrative personnel.

*Denotes those present during the exit interview March 4, 1982.

2. Licensee Action on Previous Inspection Findings

(Open) Unresolved Item (267/8128-01): Reactor Building Exhaust Filters: This item was identified in NRC Inspection Report 50-267/81-28 and involved documentation not being available to determine if filters had been tested to meet the requirements of the Technical Specifications. See paragraph 10 for additional details. This item remains open.

(Open) Open Item (267/8128-01): Gaseous Iodine/Particulate and Liquid Monitors: This item was identified in NRC Inspection Report 50-267/81-28 and involved the lack of a comprehensive calibration and testing program that satisfies the recommendations of ANSI N323-1978. See paragraph 8 for additional details. This item remains open.

(Open) Open Item (267/8128-02): Control Room Filter and Technical Support Center Filters: This item was identified in NRC Inspection Report 50-267/81-28 and involved the licensee not including these systems in a routine surveillance program. See paragraph 10.b for additional details. This item remains open.

(Open) Open Item (267/8221-03): Primary Coolant Sample Lines/NUREG-0737, Item II.B.3, "Postaccident Sampling Capability: This item was identified in NRC Inspection Report 50-267/82-21 and involved the licensee not determining the potential for line blockage, activity plate-out, or sample distortion. This item remains open.

(Open) Open Item (267/8221-05): Reactor Building Ventilation Exhaust Monitor: This item was identified in NRC Inspection Report 50-267/82-21 and involved the licensee not determining the effect of entrained moisture on the zeolite cartridge adsorbers in the iodine sampling system of the reactor building ventilation exhaust effluent stream. This determination had not been completed. This item remains open.

(Open) Unresolved Item (267/7815-01): Use of Reactor Building Sump for Processing Radioactive Liquids: This item was identified in NRC Inspection Report 50-267/78-15 and discussed in NRC Inspection Report 50-267/81-28 which involved the licensee using the reactor building sump as a part of the radwaste system. See paragraph 6.a for details. This item remains open.

3. Open Items Identified During This Inspection

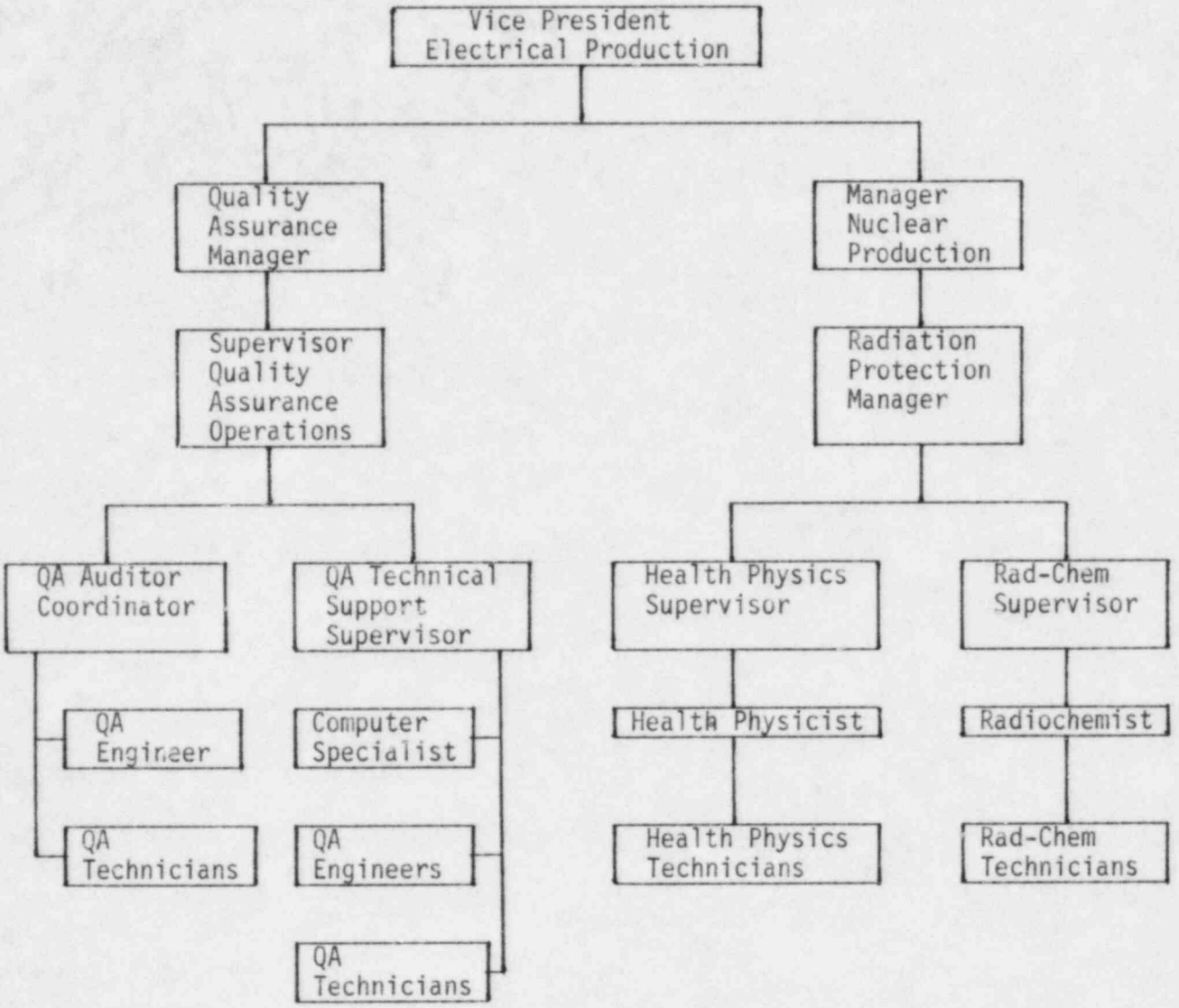
(Open) Unresolved Item (267/8306-01): Incomplete Surveillance Reports: The station manager's signature did not appear on certain surveillance reports which deviated from established surveillance procedures. See paragraph 9 for details.

4. Scope of Inspection

The purpose of this inspection was to review the licensee's radwaste program for the period December 1, 1981, through February 1, 1983.

5. Organization

The following chart shows the FSV Quality Assurance (QA), Health Physics (HP), and Radiochemistry (Rad Chem) organizations that affect the radwaste program. The HP organization was reviewed during the period of August 30-September 3, 1982 (see NRC Inspection Report 50-267/82-21), and was found satisfactory. There had not been any changes in the intervening period. The radiochemistry organization was reviewed during this inspection.



No violations or deviations were identified.

6. Radioactive Effluent Releases

a. Liquid

The NRC inspector examined the liquid effluent release program to determine compliance with items 4.8.2 and 5.8.2 of the Technical Specifications.

An unresolved item (267/7815-01) initially reported in Report 50-267/78-15 and subsequently reported in Report 50-267/81-28 involved the use of the reactor building sump as part of the radwaste system.

The primary NRC concern has been that the reactor building sump was being used as part of the radwaste system. However, the reactor building sump was not included in the FSAR as an integral part of the radwaste system. During previous discussions the licensee has stated that the system problems which resulted in past use of the sump had been corrected and this type of use would not be necessary in the future. However, due to chemical contamination of the demineralizer system in late 1982 which reduced the associated decontamination factors, the licensee has resorted to reuse of the sump to dilute liquid waste prior to discharge in order to stay within Technical Specification limits. This item (267/7815-01) is considered unresolved pending:

- Analysis of the radiological hazards involved in using the reactor building sump as a part of the radwaste system.
- Provide for proper monitoring of the effluent released from the sump which includes the collection of representative effluent samples.
- Revision to the FSV FSAR by July 1, 1983, to include the reactor building sump as a part of the radwaste system.

No violations or deviations were identified.

b. Gaseous

The NRC inspector examined the gaseous effluent release program to determine compliance with items 4.8.1 and 5.8.1 of the Technical Specifications.

No violations or deviations were identified.

7. Records and Reports of Radioactive Effluents

The NRC inspector reviewed records and reports required by 10 CFR 50.36a(a)(2). The licensee's semiannual reports conform to the format recommended in Regulatory Guide 1.21.

No violations or deviations were identified.

8. Effluent Control Instrumentation

The NRC inspector reviewed records and procedures regarding calibration results, response tests, operational checks, and alarm set-points for the various liquid and gaseous effluent monitors to determine compliance with items 4.8.1, 4.8.2, 5.8.1, and 5.8.2 of the Technical Specifications.

The open item (267/8128-01) identified in NRC Inspection Report 50-267/81-28 involved the lack of a comprehensive calibration and testing program for Gaseous Iodine/Particulate (RT-7325-1 and 2) and Liquid Monitors (RT-6212 and RT-6213) which would satisfy ANSI N327-1978. The licensee had completed the necessary work except for revising SR 5.8.2c-Q, "Radioactive Liquid Activity Monitor Calibration," and was developing a new results procedure which would complete the calibration and testing program. The estimated completion date for this item is June 30, 1983. This item remains open.

No violations or deviations were identified.

9. Procedures for Controlling the Release of Effluents

The following Surveillance Reports and Release Permits were reviewed during this inspection:

Surveillance Reports:

SR 5.2.11-W, "Primary Reactor Coolant Radioactivity Analysis"

SR 5.2.12-W, "Primary Reactor Coolant Chemical Analysis"

SR 5.3.7-W, "Secondary Coolant Activity"

SR 5.4.9-W, "Area and Miscellaneous Process Radiation Monitors Functional Test"

SR 5.5.3a-SA, "Reactor Building Exhaust Filters"

SR 5.5.3bc-A, "Reactor Building Exhaust Filters"

SR 5.5.3de-SA, "Reactor Building Exhaust Filters - Charcoal Filter Samples"

SR 5.8.1abc-M, "Radioactive Gaseous Effluent System Test"

SR 5.8.1cd-Q, "Radioactive Gaseous Effluent System Calibration"

SR 5.8.1e-A, "Radioactive Gaseous Effluent Flow Recorders Calibration"

SR 5.8.1f-W, "Radioactive Gaseous Effluent Vent Iodine/Particulate Filter Analysis"

SR 5.8.2a-A, "Radioactive Liquid Effluent System"

SR 5.8.2bc-M, "Radioactive Liquid Effluent System Instrumentation"

SR 5.8.2c-Q, "Radioactive Liquid Effluent Activity Monitor Calibration"

Liquid Release Permits (January 1, 1982, through January 31, 1983)
Form (c) 372-02-2535

Gaseous Release Permits (January 1, 1982, through January 31, 1983)
Form (c) 372-02-25366

The licensee's release permits indicate that the following items are verified as part of releases made from the various hold-up tanks:

. Compliance with Technical Specifications

. Total activity released

. Total volume released

. Duration of release

. Response test of effluent monitors

. Dilution flow rate

. Maximum allowable release rate

. Effluent monitor set-point

. Total activity released

. Authorization signatures

The licensee's surveillance procedures require that the station manager review and acknowledge, by his signature, any surveillance report where the results deviate from established surveillance acceptance criteria. These deviations could include such items as the test not conducted within the established frequency, results not within established acceptance criteria, etc. If a particular test results did not satisfy a test requirement, a supplemental report is attached to the surveillance report which includes the reason as to why the test results did not satisfy the surveillance criteria.

During the review of selected reports including: SR 5.4.7-W, "Area and Miscellaneous Process Radiation Monitor Functional Test," SR 5.8.1abc-M, "Radioactive Gaseous Effluent System Test," and SR 5.8.2bc-M, "Radioactive Liquid Effluent System," the NRC inspector noted that the station manager had not signed all surveillance reports where test results deviated from the established criteria. The NRC inspector did not have enough time to review all surveillance results to determine if the lack of station manager signatures were only isolated cases or an indication of the lack of management oversight and the failure to follow procedures regarding a general program area.

This is considered an unresolved item (267/8306-01) pending a thorough review on a subsequent inspection.

No violations or deviations were identified.

10. Testing of Air-Cleaning Systems

a. Technical Specification Systems

The NRC inspector reviewed the air-cleaning systems' surveillance results to determine compliance with Technical Specification, items 5.5.3a, b, c, d, and e.

Technical Specification SR 5.5.3.d states, "Flow distribution across the HEPA and charcoal filter will be tested with initial operation of the system and following any structural modification to the filter housings. Air distribution shall be demonstrated within ± 20 percent across the HEPA and charcoal filter when tested in accordance with ANSI N510-1975." The unresolved item (267/8128-01) in Inspection Report 50-267/81-28 involved the lack of documentation that would demonstrate that the filters had been initially tested in accordance with Technical Specification SR 5.5.3.d.

The NRC inspector determined that the licensee had performed the necessary tests after September 1982. The licensee had requested the necessary documentation from the vendor who performs initial tests. This unresolved item (267/8128-01) remains open pending the review of this documentation.

b. Nontechnical Specification Items

The NRC inspector determined that the licensee had initiated the development of procedures which will provide surveillance of the control room and technical support center filter systems. This lack of surveillance was considered an open item (267/8128-02) in Inspection Report 50-267/81-28. Upon implementation of the proposed procedures, the filter systems and surveillance program should satisfy the recommendations of Regulatory Guides 1.52 and 1.140.

No violations or deviations were identified.

11. Reactor Coolant Quality

The NRC inspector examined the analyses of the reactor coolant to determine compliance with Technical Specifications 4.2.8, 4.3.8, 5.2.11, 5.2.12, and 5.3.7.

Documents Reviewed

- Radiochemistry Procedure (RCP)-22, "Primary Coolant Radioactivity Surveillance for Technical Specification SR 5.2.11-W"
- Radiochemistry Procedure (RCP)-23, "Analysis of Secondary Coolant Radioactivity for Surveillance Requirement SR 5.3.7-W"

No violations or deviations were identified.

12. Radioactive Solid Waste

The NRC inspector reviewed the licensee's program to determine compliance with 10 CFR 71.

a. Shipments

Documents Reviewed

- Health Physics Procedure (HPP)-68, "FSV Irradiated Reflector Block Shipping"
- Attachment HPP-68A, "Package Activity Worksheet"
- Attachment HPP-68B, "Chem-Nuclear Systems, Inc., Straight Bill of Loading"
- Attachment HPP-68C, "Vehicle Radiological Survey Form Incoming & Outgoing Services"
- Attachment HPP-68D, "Washington State Dept. of Social & Health Services for Level Radioactive Waste Shipment Certification Form"
- Attachment HPP-68E, "Driver's Instructions for Exclusive Use Vehicles"
- Attachment HPP-68F, "Prior Notification of Shipment of Low-Level Solid Waste to Beatty, Nevada, or Hanford, Washington
- Attachment HPP-68G, "Radioactive Waste Shipment & Disposal Form"
- Attachment HPP-68H, "For Completing U.S. Ecology's Radioactive Waste Shipment and Disposal Form"
- Attachment HPP-68I, "Radioactive Material Removal Record"
- HPP-26, "Radioactive Material Control and Handling"
- HPP-30, "Radioactive Material Classification, Packaging, and Labeling"
- Reflector Block Shipping Papers, RB-83-01 through RB-83-08
- State of Washington Radioactive Materials License No. WN-I-019-2, Amendment No. 15
- South Carolina Radioactive Waste Transport Permit No. 0175-05 83-X

The licensee's records indicated that eight shipments consisting of irradiated fuel blocks were made between January 18-February 14, 1983.

No violations or deviations were identified.

b. Radioactive Waste Activity

The lack of an adequate procedure to accurately estimate the radioactive contents of drums containing radioactive waste was discussed in NRC Inspection Report 50-267/80-13. The NRC inspector noted that Procedure HPP-26 had been issued to correct this problem.

No violations or deviations were identified.

13. Audits

The inspectors examined audits conducted by the licensee's QA department of radwaste and radiochemistry activities for the period January 1-December 31, 1982.

The inspection and audit functions of the licensee's QA program are accomplished by the performance of monitoring activities and audits, which result in quality assurance monitoring manual (QAMM) reports, quality assurance audits (QAA), and nuclear facility safety committee (NFSC) audits. Various QAMMs, QAAs, and NFSCs are performed every 2 years.

The following audits were reviewed:

. QAMM P3-1, "Gas Waste System Operability"

. QAMM P3-2, "Radioactive Waste and Disposal"

. QAMM P3-5, "Radioactive Waste System Operability"

. NFSC-A-82-1, "Technical Specification Compliance Audit, September 1982.

These audit reports indicated that timely corrective action was completed for those deficiencies identified in the reports.

The NRC inspector noted that QAMM P3-3, "Gas/Liquid Waste Releases," had not been performed in the past 2 years. Upon discussing this with the licensee, the NRC inspector determined this item had been included as open item (267/8304-02) in Inspection Report 50-267/83-04. This inspection was a QA inspection performed by the Division of Resident, Reactor Project and Engineering Programs.

The NRC inspector expressed concern to the licensee about the lack of expertise regarding radwaste activities for teams conducting the radwaste audits.

No violations or deviations were identified.

14. Reportable Occurrences (ROs)

The NRC inspector reviewed ROs documented by the licensee regarding radwaste activities for the period January 1, 1982, through January 31, 1983. The following ROs were reviewed:

"82-004, February 2, 1982": Unauthorized radioactive liquid waste release, gross beta gamma level in excess of Technical Specification LCO 4.8.2(c) limits. (Improper valve lineup)

"82-009, March 6, 1982": Unsampled gas waste release, contrary to Technical Specification LCO 4.8.1(a). (Failure to close valve)

"82-022, May 21, 1982": Two unauthorized gas waste releases contrary to Technical Specification LCO 4.8.1. (Malcperation of a clearance point valve for a gas waste compressor and unanticipated gas leakage during maintenance activities on a gas waste compressor)

"82-041, October 11, 1982": Trip set-point for radioactive liquid effluent monitors, RIS-6212, during calibration was found to be less conservative than required and is a degraded mode of Technical Specification LCO 4.8.2(d) per FSV Technical Specification AC 7.5.2(6)2.

"82-042, October 13, 1982": Unsampled, unplanned radioactive gaseous release to atmosphere which was less than maximum permissible concentration. This event constituted a degraded mode of LCO 4.8.1 and was reported per AC 7.5.2(6)4 of the FSV Technical Specifications. (Blank flange had a leaking seal.)

"83-002, January 4, 1983": Proportional sampler was inoperable; therefore, daily samples were not taken during seven liquid releases made automatically from reactor building sump. This was a degraded mode of Technical Specification LCO 4.8.3(f).

The NRC inspector verified that the action taken by the licensee regarding the above ROs was in compliance with the Technical Specification requirements.

No violations or deviations were identified.

15. Plant Tour

The NRC inspector toured the plant on March 2, 1983. Particular attention was given to the radwaste system, effluent monitors, and the reactor building sump. The NRC inspector observed the detector locations and their associated readout instrumentation in the control room. The NRC inspector verified that the following monitors and recorders were in service and operating:

RT 6314-1&2, "Waste Gas Effluent Particulate and Iodine Monitors"

RT 46211, "Waste Gas Compressor Cooling Water Monitor"

RT 46212, "Waste Gas Compressor Cooling Water Monitor"

RT 7324-1&2, "Reactor Plant Ventilation Exhaust Gas Monitors"

RT 73437-1&2, "Reactor Building Vent Stack Monitors"

RT 9302, "Gas Beta Monitor"

RT 21251, "Low Pressure Separator Drain Line Monitor"

RIS 6212, "Radioactive Liquid Waste Effluent Monitor Recorder"

RIS 6213, "Radioactive Liquid Waste Effluent Monitor Recorder"

RIS 6314-1&2, "Waste Gas Effluent Particulate and Iodine Monitor Recorders"

RIS 7324-1&2, "Reactor Plant Ventilation Exhaust Gas Monitor Recorders"

RIS 7325-1&2, "Turbine Building Particulate and Iodine Monitor Recorders"

RIS 9301, "Primary Coolant Beta Gas Monitor Recorder"

RIS 21251, "Low Pressure Separator Drain Line Monitor Recorder"

RIS 46211, "Waste Gas Compressor Cooling Water Monitor Recorder"

RIS 31193, "Air Ejector Exhaust Monitor Recorder"

RIS 73437-1&2, "Reactor Building Vent Stack Monitor Recorders.

No violations or deviations were identified.

16. Unresolved Items

Unresolved items are matters about which more information is required in order to ascertain whether they are acceptable items, items of non-compliance, or deviations. The unresolved item disclosed during this inspection is discussed in paragraph 9.

17. Exit Interview

The NRC inspector met with the representatives (denoted in paragraph 1) at the conclusion of the inspection on March 4, 1983. The NRC inspector summarized the scope and findings of the inspection.

NRC FORM 766 (11-81) IE MC 0535

U.S. NUCLEAR REGULATORY COMMISSION

INSPECTOR'S REPORT

Office of Inspection and Enforcement

PRINCIPAL INSPECTOR (Name, last, first, and middle initial): Holley, Wesley L.

REVIEWER: Blaine Murray

INSPECTORS:

LICENSEE/VENDOR	TRANSACTION TYPE	DOCKET NO. (8 digits) OR LICENSE NO. (BY PRODUCT) (13 digits)	REPORT NO	SEQ	NEXT INSPEC. DATE MO	YR
Public Service Company of Colorado	I – INSERT; M – MODIFY; D – DELETE; R – REPLACE	05000267	8306	A, B, C, D		

PERIOD OF INVESTIGATION/INSPECTION FROM (MO DAY YR)	TO (MO DAY YR)	INSPECTION PERFORMED BY	OTHER	ORGANIZATION CODE OF REGION/HQ CONDUCTING ACTIVITY (See IEMC 0530 "Manpower Reporting—Weekly Manpower Reporting" for code.) REGION	DIVISION	BRANCH
02 28 83	03 04 83	X 1 – REGIONAL OFFICE STAFF; 2 – RESIDENT INSPECTOR; 3 – PERFORMANCE APPRAISAL TEAM		A	B	A

REGIONAL ACTION (Check one box only)	TYPE OF ACTIVITY CONDUCTED (Check one box only)
1 – NRC FORM 591; X 2 – REGIONAL OFFICE LETTER	X 02 – SAFETY; 03 – INCIDENT; 04 – ENFORCEMENT; 05 – MGMT. AUDIT; 06 – MGMT. VISIT; 07 – SPECIAL; 08 – VENDOR; 09 – MAT. ACCT.; 10 – PLANT SEC.; 11 – INVENT. VER.; 12 – SHIPMENT/EXPORT; 13 – IMPORT; 14 – INQUIRY; 15 – INVESTIGATION

INSPECTION/INVESTIGATION FINDINGS (Check one box only)	TOTAL NUMBER OF VIOLATIONS AND DEVIATIONS	ENFORCEMENT CONFERENCE HELD	REPORT CONTAIN 2.790 INFORMATION	LETTER OR REPORT TRANSMITTAL DATE: NRC FORM 591 OR REG. LETTER ISSUED (MO DAY YR)	REPORT SENT TO HQ. FOR ACTION (MO DAY YR)
A: X 1 – CLEAR; 2 – VIOLATION; 3 – DEVIATION; 4 – VIOLATION & DEVIATION	A: 00	1 – YES	1 – YES	05 23 82	

MODULE INFORMATION

REC ORD TYPE	NUMBER	PHASE	MANUAL CHAPTER	PROCEDURE NUMBER	LEVEL	SEQ #	PRIORITY	DIRECT INSPECTION EFFORT IN STAFF HOURS EXPENDED THIS INSPECTION	PERCENTAGE COMPLETED TO DATE	STATUS	MODULE REQ. FOLLOWUP PHASE	MANUAL CHAPTER	PROCEDURE NUMBER	LEVEL
B	1	5	84	710	B	A		029	85					
						B								
						C								
						D								
B	1	5	30	703	B	A		002						
						B								
						C								
						D								
B	1	5	92	706	B	A		002						
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* CIRCLE SEQUENCE IF VIOLATION OR DEVIATION