

I. GENERAL

The licensee has initiated a significant change in attitude and commitment to quality assurance. They have increased their staff numbers and expertise and they have reviewed, revised, and improved their QA/QC procedures, training, audits, nonconformance reporting, and control of ongoing work. This change has come about as a result of NRC's investigation of QA allegations and the identification of many QA problems during early 1981. Additional QA requirements were agreed to by the licensee and are confirmed in Region III's Immediate Action Letter of April 8, 1981.

Although many changes have been made, piping supports and restraints and inadequate corrective actions, as evidenced by repetitive problems, continue to be areas of concern. Other areas of concern have been identified in the NRC investigation of 1981 (Report No. 81-13). Because of this Region III issued an Immediate Action Letter (IAL) on April 8, 1981, to Cincinnati Gas and Electric Company for ongoing and future work at the site to give increased assurance that the work is accomplished in accordance with regulatory requirements. It required substantially more involvement in quality control inspections and the quality assurance program by CG&E personnel. Also, because of the problems identified during the NRC investigation, a comprehensive review and reinspection effort by the licensee must be accomplished to confirm the quality of the existing construction work. This quality confirmation program addresses the problems identified to date and includes the following areas: (1) structural steel, (2) weld quality, (3) traceability of heat numbers on piping, (4) socket weld fitups, (5) radiographs, (6) design control and verification, (9) design document changes, (10) subcontractor QA programs, and (11) audits. In addition, Region III plans to conduct inspections in the above areas to independently assess the adequacy of the licensee's quality confirmation program and the adequacy of construction.

II. SPECIFICA. Contention

"The Zimmer facility displayed evidence of weakness in the areas of quality assurance management, piping and hanger supports, and training."

1. Basis

During the SALP period there were 16 construction inspections, 13 operations inspections, one in radiation protection, one in emergency planning, and one in confirmatory measurements and environmental monitoring. Seventeen infractions

IE Inspection Report
No. 80-27

and one deficiency were identified in the construction area and nine infractions and one deficiency were identified in the operations area. The large numbers of items of noncompliance and the licensee's failure to identify items prior to the NRC finding them, and their lack of adequate corrective action (See Contention D) are evidence of weaknesses in quality assurance. Piping and hanger problems are discussed in Contention F, and training in Contention H.

2. NRC Actions

IE Inspection Report
No. 80-27

These concerns were discussed by Region III management with the licensee in the SALP review meeting held on December 16, 1980. Following NRC identification of QA/QC problems during the investigation conducted in the first half of 1981, Region III discussed our concerns in meetings with the Executive Vice-President on March 31, 1981 and with the President of CG&E on June 3, 1981 and August 5, 1981. In addition, increased inspection effort has been given to these areas.

3. Licensee Corrective Actions

The licensee has responded to each individual item of noncompliance and has taken additional measures which are described in subsequent contentions such as stopping work by the pipe support contractor, replacing their QA manager, hiring additional QA/QC staff, increasing their QA staff expertise, and giving additional QA training.

B. Contention

"The licensee had not adequately implemented quality assurance and management controls."

1. Basis

This statement appears to be based on the Regional SALP report justification for increased inspection effort in the area of Quality Assurance Management which states:

"Increased inspection is recommended in the Quality Assurance management area due to the continued increase in items of noncompliance

in spite of reduced construction activity and the lack of aggressive and effective management of the Quality Assurance organization."

And, following a summary review of the numbers of items of noncompliance, the Regional SALP report states: "Licensee management needs to focus additional attention on the implementation of the QA program, the identification of problems, and corrective actions. Notwithstanding the above, with the exception of pipe support systems, the quality of facility construction is considered to be adequate."

2. NRC Actions

IE Inspection Reports
No. 50-358/81-13, 14,
15, 16, 18, 19, & 20

This concern was discussed with licensee management during the SALP review meeting of December 16, 1980. In addition, the two Region III resident inspectors and specialist inspectors from the Regional office have been following licensee actions closely. Additional QA staffing, inspection, and management requirements have been imposed on the licensee as a result of the NRC investigation into QA allegations as a result of IAL dated April 8, 1981.

3. Licensee Corrective Actions

IE Inspection Reports
No. 50-358/81-13, 14,
15, 16, 18, 19, & 20

As a result of the NRC investigation into QA allegations, and actions imposed on the licensee by the NRC in the immediate Action Letter of April 8, 1981, the licensee has increased their QA staff, replaced their QA manager, reviewed and revised site inspection procedures, and they are in the process of strengthening their entire QA/QC effort.

C. Contention

"There were numerous items of noncompliance involving quality assurance criteria."

1. Basis

IE Inspection Report
No. 50-358/80-27

The Regional SALP report identified 18 items of noncompliance in the construction area which were divided between ten of the 18 criteria of Appendix B to 10 CFR 50 as follows:

<u>Criterion</u>	<u>Subject</u>	<u>Noncompliance Items</u>
II	QA Program	1
III	Design Control	2
V	Procedures	1
VI	Document Control	2
IX	Special Processes	2
X	Inspection	3
XI	Test Control	1
XIII	Handling and Storage	2
XV	Nonconforming Materials	3
XVI	Corrective Actions	<u>1</u>
Total		18

Six of above listed noncompliance were caused by failure to follow procedures, four were caused by inadequate procedures, three were attributed to design problems, one was caused by inadequate construction practice, one was caused by carelessness, and one was attributed to poor housekeeping.

2. NRC Actions

This was discussed by Region III management with the licensee on December 16, 1980 in the SALP review meeting. Since then, the Region has increased the amount of inspection effort devoted to Zimmer and as a result of our investigation into allegations concerning quality assurance problems, the Region issued an Immediate Action Letter (April 8, 1981) requiring the licensee to increase their QA/QC staff size and expertise and to re-inspect all work inspected by the licensee's contractors. The NRC also imposed other requirements to strengthen the licensee's QA program. Meetings with the licensee were held on March 31, April 10, April 30, June 2, June 3, and August 5, 1981.

IE Inspection Reports
No. 50-358/81-14,
16, 20, 13 & IAL of
April 8, 1981

IE Inspection Reports
No. 50-358/81-13, 14
16, 20 & 81-11

3. Licensee Corrective Actions

See response to B.3.

D. Contention

"There were instances where identification of problems and corrective actions were inadequate."

1. Basis:

IE Inspection Reports
No. 50-358/79-37,
80-14, 80-19 & 80-27

The licensee was cited four times during the SALP period for failure to take adequate corrective actions. In Report No. 79-37 for the inspection conducted December 27 and 28, 1979, and January 17, 1980, the licensee was cited for repetitive items involving snubbers and pipe hangers. In Report No. 80-14, for the inspection conducted June 2-26, 1980, the licensee was cited for failure to respond to and/or correct audit findings. In Report No. 80-14 and again in Report No. 80-19, for inspections conducted June 2-26, 1980, and August 1-29, 1980, the licensee was cited for repetitive items involving weld rod warmers not being plugged in.

Because the NRC inspectors identified many items of noncompliance (as discussed in A above) Region III concluded in their SALP report that: "Although none of these items are significant by themselves and licensee management has been responsive to NRC identified concerns, the licensee's Quality Assurance system has not identified these same concerns. Emphasis needs to be placed on identifying and correcting deficiencies in the implementation of the QA program. Also, an increased management awareness of commitments made and the required completion dates is needed."

2. NRC Actions

IE Inspection Reports
No. 50-358/80-25
80-26 & 81-18

The NRC has been following the licensee's corrective actions closely. Three additional items of noncompliance have been issued for the same reasons. In Report No. 80-25 the licensee was cited for failure to take adequate corrective action relating to safety-related suspension design and installation. In Report No. 80-26 the licensee was

cited for inadequate corrective action for an audit report finding. In Report No. 81-18 for the month of June 1981, the Region III resident inspectors cited the licensee again for failure to take adequate corrective action.

3. Licensee Corrective Actions

Thus far licensee corrective actions for this item have not been satisfactory.

E. Contention

"The QA organization lacked aggressive and effective management."

1. Basis

IE Inspection Report
No. 50-358/80-27

This statement was from the Region III SALP report (80-27). It is based on the numbers of items of noncompliance (26 infractions and two deficiencies) during the SALP period. The Region is of the opinion that the licensee should have identified many of the items the NRC identified.

2. NRC Actions

IE Inspection Reports
No. 50-358/80-27,
80-13, 14, 15, 16
18, 19, & 20

Region III identified the QA management area as deserving increased inspection effort. The resident inspectors have been following licensee actions closely. Because of the QA allegations received in November, 1980, and January, 1981, increased inspection and investigation effort has been given to QA at Zimmer. Additional QA requirements have also been imposed on the licensee by the Immediate Action Letter dated April 8, 1981.

3. Licensee Corrective Actions

The licensee has replaced their QA manager and has increased the size and expertise of the QA staff.

F. Contention

"There were numerous instances of rejected work and continuing problems with the quality assurance aspects of piping and hanger supports installation."

1. Basis

Problems in the area of pipe supports and hangers were identified in Report No. 79-37 for December 1979 and January 1980; in 80-05 for February and March 1980; and in 80-13 for May, 1980. A total of eight infractions were issued (4, 3, and 1 respectively in the above mentioned reports.) The items involved failure to inspect snubbers, changes to snubber inspection procedures, protection of snubbers, inadequate corrective measures, inadequate design control, inadequate document control, inadequate control of nonconformances, and inadequate pipe whip restraint bolt specifications.

IE Inspection Reports
No. 50-358/79-37,
80-05 & 80-13

2. NRC Actions

Region III increased the inspection effort in the area of piping and hanger supports. Nine additional items of noncompliance were cited in inspection report 80-25 for December 1980. A management meeting was held by Region III with the licensee on January 28, 1981 to discuss this matter.

IE Inspection Reports
No. 50-358/80-22 &
80-25, IAL dated
December 24, 1980,
& IE Inspection Report
No. 50-358/81-04

3. Licensee Corrective Actions

Based on the NRC inspection findings the licensee stopped work in this area (Work by RCI) on December 9, 1980, until the problems could be corrected. They have required additional improvements in the contractor's QA program and when implemented, the licensee will audit the contractor before permitting work to resume. The NRC must give approval prior to the resumption of work.

IAL dated December 24,
1980, & IE Inspection
Report No. 50-358/81-04

G. Contention

"There were items of noncompliance involving procedure adherence and welding."

1. Basis

Four out of 18 items of noncompliance identified in the construction inspections were caused by failure to follow procedures and four out of the 18 were caused by inadequate procedures. These were identified during inspections that occurred in December 1979, January 1980, March 1980, April-May 1980, and August 1980, and were in test

IE Inspection Reports
No. 50-358/79-37,
79-39, 80-03, 80-07,
80-09, & 80-20

procedures, weld rod control, bolting of electrical supports, segregation and release of material in "hold", snubber inspections, use of memos, and protection of components.

2. NRC Actions

Each instance of failure to follow procedure or inadequate procedure was cited as an item of noncompliance. The overall problem was discussed in the SALP meeting with the licensee on December 16, 1980.

3. Licensee Corrective Actions

The licensee responded to each item of non-compliance and has taken or is taking corrective action to resolve each specific problem. The licensee has fired welders that failed to follow their procedure to keep extra weld rod warm.

H. Contention

"The training area was characterized by inadequate staff, procedures that were not fully implemented, and the lack of BWR operational experience in the training group."

1. Basis

The site training group consists of the training coordinator, one CG&E employee, and one contracted person. Although both CG&E trainers have nuclear navy PWK experience, neither has BWR operational experience. The administrative procedures for the training group have not been completed and as of July 1981, no implementing procedures have been written.

IE Inspection Reports
No. 50-358/78-11 &
80-17

2. NRC Actions

Training, staff size, and lack of BWR operational experience were discussed by Region III in the SALP meeting with the licensee. A follow-up inspection was conducted in January 1981. The subject of plant and corporate staffing for the operation of the plant was discussed by NRR with the licensee in a meeting on August 11, 1980. The resident inspector recommended to the licensee that all operators receive training at a BWR-6 simulator.

IE Inspection Reports
No. 50-358/80-27 &
81-01

3. Licensee Corrective Actions

The licensee has committed to send all cold licensed operator candidates to the Perry BWR-6 simulator.

I. Contention

"Zimmer received a relatively large number of items of noncompliance, when compared with other power reactor facilities under construction."

1. Basis

IE Inspection Report
No. 50-358/80-27

There were 28 items of noncompliance identified and cited during the SALP report period. The number of items of noncompliance at Zimmer is the highest of any plant under construction in Region III. Although construction activities have been winding down, the numbers of noncompliance items remain high (1979: 39 inspections - 24 infractions and six deficiencies; first ten months in 1980: 23 inspections - 19 infractions and two deficiencies).

2. NRC Actions

This was discussed by Region III at the SALP review meeting with the licensee on December 16, 1980.

3. Licensee Corrective Actions

See Item B.3 above.

MAR 10 1981

Docket No. 50-327/328

MEMORANDUM FOR: E. L. Jordan, Deputy Director, Division of Resident and Regional Reactor Inspection, IE

THRU: W. R. Mills, Acting Chief, Events Evaluation Section, Reactor Engineering Branch, DRRRI, IE

FROM: H. W. Woods, Reactor Systems Specialist, Events Evaluation Section, Reactor Engineering Branch, DRRRI, IE

SUBJECT: SEQUOYAH EVENT ON FEBRUARY 11, 1981: INADVERTENT CONTAINMENT SPRAY FROM PRIMARY SYSTEM BLOWDOWN- (EVENT EVALUATION IE '81-2)

I. Description of Event:

The plant was in mode 5 following a shutdown 6-3/4 days before this event. The plant had operated ~5 days at ~70% power in the month prior to shutdown. The following sequence of events began February 11, 1981.

Equipment in operation before the event was:

RCP #1 and #2
"A" RHR pump
"A" centrifugal charging pump
Containment purge from upper and lower containment

Reactor conditions prior to the event were:

Reactor temperature 175°F
Reactor pressure 310 psig

<u>TIME (CST)</u>	<u>EVENT</u>	<u>SOURCE OF INFORMATION</u>
1940	Auxiliary Operator opened FCV 72-40 (opening RHR system to containment spray header) as result of a verbal miscommunication with the reactor (unit) operator.	interview with operator
1940	Pressurizer low level alarm	Computer
1941	Shutdown RCPs 1 and 2	Computer
1942	Pressurizer pressure atmospheric	Recorder
1942	Pressurizer level zero	Recorder
1943	Switch "A" chg pump suction to RWST from VCT	Recorder
1943	Placed maximum cooling on "A" RHR	Recorder

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MAR 10 1981

<u>TIME (CST)</u>	<u>EVENT</u>	<u>SOURCE OF INFORMATION</u>
1944	Started "B" RHR with suction from reactor	Computer
1945	Reactor Building evacuation (voice announcement)	Log
1946	Opened A&B loop common RHR suction (Valve 63-1) to RWST <u>(Did not close RHR suction from reactor hot leg)</u>	Recorder
1947	Pulled-to-lock reactor building floor and equipment drain sump pumps	Interview
1947	Stopped containment purge	Interview
1950	Pressurizer level 13% and increasing	Computer
1950	Pressurizer pressure increasing to 15 psig	Recorder
1952	Pressurizer level cycling to 13%, then decreasing, then increasing, apparently due to a check valve reseating then reopening in RWST line (caused by reactor pressure variations)	Computer
1957	Implemented IP-4 Site Emerg.	Log
2000	Shift engineer called NRC - no answer after 7 or 8 rings	Log & Interview
2012	Manually initiated aux. building isolation	Log
2015	Started "B" centrifugal charging pump, suction from RWST	Computer
2015	Started "A" SI pump	Interview, not confirmed
2015	Started closing RHR containment spray valve	Log
2022	RHR spray valve closed	Recorder
2023	Stopped "A" SI pump	Interview, not confirmed
2024	Stopped "B" cent. chg. pump	Computer
2024	Re-established letdown to VCT, normal RCS pressure & pressurizer level re-established	Recorder and Computer
2025	Contacted NRC duty officer	NRC D.O. Log
2045	All clear announced for site emergency	Log

Due to uncertainty as to the exact flow vs. time from the RWST during the above sequence of events, it is not possible to exactly calculate the minimum water level reached in the core. However, it is possible to bound the minimum level in several ways:

- a. The boron concentration before and after the event can be used to calculate that about 40,000 gallons of water were replaced in the primary system (and therefore had "leaked" from the primary system - the balance of the total of 110,000 gallons that was drawn from the RWST went directly through the RHR system to the spray header). Conservatively assuming the 40,000 gallons all "leaked" before any replacement, about a 6,000 gallon volume would have been voided in the RPV since the steam generator, pressurizer and hot legs contain about 34,000 gallons. This 6,000 gallons out of the RPV would lower level less than 5 feet in the 14 foot I.D. RPV, leaving the water level well above the core. (There are ~12 feet of water above the core in the cylindrical portion of the RPV, plus additional water above that in the hemispherical head.)
- b. The RHR pumps in the core recirculation cooling mode cannot draw inventory from below the bottom of the hot leg nozzles (temperature was 175°F). This would leave about 3 feet of water above the core, conservatively assuming that water was pumped to that level (which it surely was not). With the decay heat levels present February 11, it would have taken 5 to 7 hours to boil away that 3 feet of water (pressurizer level indication was lost only 8 to 10 minutes so this time was not available).
- c. The items (a) and (b) above provide conservative bounds but the best indication is that the water level remained high enough to keep the RPV (including the head) full since venting following this event produced no detectable amount of gas.

The following items are considered to be significant contributors to the event:

1. The auxiliary Unit Operator who inadvertently opened FCV 72-40 (the only barrier between the RHR/RCS and the backup containment spray header) was not experienced in the Sequoyah Auxiliary Building - he was starting his first shift in that building, and had not been provided any orientation training with a qualified person prior to that shift. He recognized that FCV 72-40 was an RHR Spray isolation valve, as stated on the metal tag hung from the valve, but apparently he felt that the reactor operators had a good reason for wanting the valve opened. He was not offered, and did not ask for, a look at system drawings before entering the Auxiliary Building to complete his assignment. He continued to open the valve which he thought he'd been told to open, even though he recognized that flow was initiated through the pipe by his action. He became aware that he may have caused a problem when he met people evacuating containment as he left the Auxiliary Building. He reported his actions to an assistant shift engineer when he arrived back in the control room at which time the operators became aware of the cause of the problem and closed FCV 72-40.

MAR 10 1981

2. At least 3 control room operators are known to have looked at the two areas of the control panel where the "FCV 72-40 open" indications were present. One valve position indicating light was associated with the valve control located on the lower right corner of the control panel. The second light (indicating FCV 72-40 position) is located approximately 8 feet to the left of the valve controls and is one of many "postage stamp" sized lights on a status panel designed to warn the operators when the ECCS system is not properly aligned for the injection (safety) mode. When the first such misalignment occurs, the individual valve's light comes on and an alarm sounds and flashes. However, the status panel is designed for modes 1 through 3 when ECCS injection capability is required. On February 11 in mode 5 (RHR cooling) several valves were already (correctly) "misaligned," so this panel already showed several lights and the alarm light was already on continuously. Thus, basic design of the indicator/alarm system strongly contributed to the operator's missing the "FCV 72-40 open" indication. (Earlier discovery of the open valve would not have prevented the event, but would have diminished the amount of water removed from the RPV and the amount of water sprayed into containment).

II. Actual Consequences of Event

About 110,000 gallons of water from the primary system and the RWST were sprayed into the containment. Damage to electrical equipment as a result of the spray was minimized due to the compartmentation arrangement of the ice condenser containment. The upper volume is completely separated from the lower volume by concrete shield walls that are built over the reactor, steam generators, pressurizer, etc., so that there is little other than concrete in the upper containment.

A small amount of ice was melted when some spray impinged on the ice beds through the open intermediate level ice condenser doors (40 lbs. maximum loss from a single ice bed, 20 lbs. average loss per bed; upper level ice condenser doors were not open, thereby preventing greater ice loss).

The only remaining concerns regarding equipment that may have been flooded in the lower containment are operability of seven sump pumps. These concerns will be resolved before restart.

The hydrogen igniters will be inspected and functionally tested per recently adopted technical specifications (a "baseline inspection" was already required before this event occurred; this baseline inspection will be performed before return to power).

III. Potential Consequences of Event

Due to lack of an ECCS initiation procedure for use in mode 5 (when using the RHR cooling mode), when the RWST suction line was opened, the operators did not recognize the potential need to close the hot leg suction line to the RHR system to insure that water would be drawn from the RWST.

The plant was at 175°F primary system temperature, but if it had been in the approximate range of 212°F to 350°F, primary system pressure would have maintained the check valve in the RWST suction line closed, preventing the injection mode of the low pressure pumps from being effective. Much greater inventory losses would be theoretically possible under those conditions. Apparently, the check valve did close and reopen at least once, as indicated by the RHR pump suction temperature recorder chart, and possibly more than once, as system pressure recovered. The check valve closure resulted in level and pressure decrease due to net RCS inventory loss through the open FCV 72-40 (without makeup from the RWST) until pressure decreased enough to allow the check valve to reopen and injection flow to recommence, (i.e., a potentially cyclic process). This phenomenon does not appear to have affected the ultimate recovery of this event significantly, but at higher temperatures the effect could have been more severe. For an extremely conservative case, a calculation similar to the boiloff calculation reported in paragraph I.(b) above can be performed assuming boiloff begins 3 hours after shutdown at an RCS temperature of 350° F (about the minimum practical time to be on the RHR recirculation system for cooling) and assuming "infinite" operating time before shutdown. For this case, instead of the 5 to 7 hours quoted in paragraph I.(b), core uncovering could begin in 1/4 to 1/2 hour.

IV. Corrective Actions

A. Short Term - (Before Restart)

1. The most urgent immediate action involves correction of the licensee's problems in the areas of inadequate personnel training, inadequate communication and/or instruction, and inadequate control/coordination of operation and/or maintenance activities in the plant. These items are addressed in the enclosed Confirmation of Action Letter to TVA from the IE Region II Office. As stated in that letter, these items were the subject of a meeting with TVA management at the Region II office on February 27, 1981. IE Region II concurrence of satisfactory correction of the problems by verification of adequacy by Region II onsite inspection is required before restart will be allowed.
2. IE is considering requiring a physical lock on the handwheel of Valve FCV 72-40 to require more deliberate thought/concurrence before it can be manually opened. The power to the valve is normally "racked out" to prevent spurious actuation from the control room or inadvertent operation due to circuit failure. It was not "racked out" during this event (thereby allowing its closure from the control room) because a surveillance procedure (stroke test) had just been completed.
3. IE is reviewing the TVA procedure to hand-seat valves (G.O.I. #6) which states the valves are "not to be turned more than 1/4 turn after the initial point of contact." IE is concerned that the valves could be tightened so as to preclude automatic (power) opening. A related concern also under IE review is the TVA practice of "turning over a valve to 'Maintenance' for testing"

at the "earliest convenience" after packing is tightened, etc. This practice has the potential for leaving one or more valves inoperable (potential common mode following packing adjustment accomplished on the back-shift).

4. TVA has committed to examine stresses in the cont. spray piping, with results to be presented before restart. The concern is for the piping downstream of FCV 72-40, some of which was subjected to pressures which may have been above the pipe's design pressure.
5. IE has requested TVA to place a caution statement in the "initiation of low pressure injection" procedures that when reactor temperature is greater than some certain temperature (to be specified but ~200 F) the recirculation suction valves from the reactor hot leg must be closed when the RWST suction valve is opened.

Acceptability of restart is dependent on IE Region II verification and concurrence that the licensee has satisfactorily resolved all of the above items. Details will be presented in an IE Inspection Report to be issued by Region II following restart. However, preliminary inspection results have shown that the licensee's own investigations, in conjunction with IE investigation of this incident, have resulted in substantial improvement in the licensee's administrative controls, communications, and training procedures. We believe these improvements, and the licensee's stronger awareness of his problems, are sufficient to justify trial of the new methods (i.e., by restarting and operating the plant).

B. Long Term - (After Restart)

1. IE will issue an Information Notice outlining the event and its contributing causes, and advising licensees to evaluate ECCS-LOCA procedures during shutdown cooling modes. Potential problems in these modes due to design of indicators/annunciators that are primarily designed for modes 1 through 3 will also be covered.
2. NRR may wish to review, from a human factors viewpoint, the ECCS board layout and design with its alarms and indicators.
3. NRR may wish to review acceptability of single valves forming the RCS boundary (FCV 72-40 and FCV 72-41, for examples) when the plant is using the RHR for cooling.
4. The NRC may wish to consider rulemaking in the areas of use of non-licensed personnel in safety-related jobs.
5. The NRC may wish to consider how the escalating number of required surveillance activities (8400/yr at Sequoyah vs. 1400/yr at Browns Ferry) has impacted overall, total plant safety. There is an optimum number of required surveillance activities considering tradeoffs between such items as mean-time to failure, the probability

of the surveillance itself causing a problem (as this event), etc. Possibly, requirements may now be beyond that optimum.

Hugh W. Woods, Reactor Systems Specialist
Events Evaluation Section
Reactor Engineering Branch, RRRI, IE

Enclosure: Confirmation of
Action Letter

- cc: J. H. Sniezek, IE
- N. C. Moseley, IE
- S. E. Bryan, IE
- RPI Directors (Regional)
- W. R. Mills, IE
- C. J. DeBevec, IE
- G. A. Schwenk, IE
- T. Novak, NRR
- R. Tedesco, NRR
- G. Lainas, NRR
- R. Vollmer, NRR
- C. Berlinger, NRR
- C. Stahle, NRR
- A. Schwencer, NRR
- C. Michelson, AEOD
- E. Adensam, NRR
- D. Eisenhut, NRR
- T. Murley, NRR
- D. Ross, NRR
- S. Hanauer, NRR
- J. P. O'Reilly, RII
- T. Marsh
- P. Collins, NRR

WPC:CY
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RRRI:IE
RWoods
3/9/81

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WRMills
3/9/81

Lewis



UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION II
101 MARIETTA ST., N.W., SUITE 3100
ATLANTA, GEORGIA 30303

FEB 23 1981

In Reply Refer To:
RII:JPO
50-327

Tennessee Valley Authority
ATTN: H. G. Parris,
Manager of Power
500A Chestnut Street Tower II
Chattanooga, TN 37401

Gentlemen:

Subject: Confirmation of Action

This refers to James P. O'Reilly's telephone conversation of February 20, 1981 with H. G. Parris regarding the results of the inspection into the cause of inadvertent containment spray event which occurred at Sequoyah Unit 1 on February 11, 1981. With regard to matters discussed, it is our understanding that prior to restart of the unit, the following actions will be completed to the satisfaction of the NRC:

1. Evaluate and revise administrative controls to assure that responsibilities and authorities of on shift operating personnel are clearly delineated in writing. In particular, assure that the responsible Shift Engineer has positive control of activities occurring during his shift that could have an effect on safe operation of the unit.
2. Develop and implement administrative controls that clearly delineate methods to be followed by personnel involved in the conduct of safe operation of the unit. These controls should address as a minimum, routine and special instructions, communications, and responsibilities of all personnel involved in safety-related activities.
3. Upgrade the in-plant on-the-job training and certification system of non-licensed operating personnel involved in the safety activities.
4. Review the certification of non-licensed operating personnel to provide positive assurance that only qualified personnel with experience on the operating unit are assigned to perform functions that can affect the safety of operations.

Our concurrence in the satisfactory completion of the above stated items will be based on information to be provided during a meeting scheduled for February 27, 1981, in our Region II offices, and subsequent verification of adequacy by Region II inspection personnel.

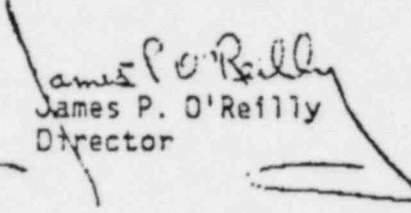
In addition, you should consider the generic applicability of these concerns to other units within the Tennessee Valley Authority system and implement corrective action if necessary.

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FEB 23 1981

Please inform this office immediately if your understanding of this matter is different from that stated above.

Sincerely,


James P. O'Reilly
Director

cc: G. G. Stack, Project Manager
J. M. Ballentine, Plant Superintendent
J. F. Cox, Supervisor, Nuclear
Licensing Section
M. J. Burzynski, Project Engineer
H. N. Culver, Chief, Nuclear Safety
Review Staff