



SUMMARY OF FINDINGS

I. Enforcement Action

Contrary to Section 5.3 of the Emergency Plan, training sessions were not conducted semi-annually to insure that personnel are familiar with their duties and responsibilities. (See DETAILS, paragraph E.4)

This item is a deficiency.

II. Licensee Action on Previously Identified Enforcement Matters 1/

Control of Portable Radiation Survey Instruments

The individual responsible for initiating corrective action was on vacation. As a result, it was not determined if the necessary corrective action has been completed. (See DETAILS, paragraph D.1) This item remains open.

III. New Unresolved Items

75/10-1 Calibration Procedures for Emergency Survey Equipment

Present procedures do not include proper calibration of emergency survey counting equipment. (See DETAILS, paragraph E.2.b)

IV. Status of Previously Identified Unresolved Items 2/

75/03-1 Sample Losses in Delivery Lines

Tests have not been conducted to determine the amount of sample loss occurring in the gaseous sample delivery lines. This item remains open. (See DETAILS, paragraph D.2.g)

75/01-1 Effluent Monitoring System Tests

Comparisons between laboratory analyses and waste effluent monitors have not been completed. This item remains open. (See DETAILS, paragraph D.2.h)

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1/ IE Inspection Report 50-313/75-03

2/ IE Inspection Report 50-313/75-05

74/14-03 Radiation Levels Inside Reactor Containment

Corrective action related to radiation levels in containment which exceed the design basis have not been completed. This item remains open. (See DETAILS, paragraph D.2.1)

75/05-1 Radiation Levels at Restricted Area Fence

Procedures have not been completed to include radiation measurements at the restricted area fence. This item remains open. (See DETAILS, paragraph D.2.a)

75/05-2 Air Sampler Flow Rates

Flow rates for ANO air samplers have not been determined. This item remains open. (See DETAILS, paragraph D.2.b)

75/05-3 Whole Body Counter Calibration Procedures

Calibration procedures have not been completed for the whole body counting system. This item remains open. (See DETAILS, paragraph D.2.c)

75/05-4 TLD Calibration and Quality Control Procedures

Calibration and Quality Control procedures have been completed for the TLD read-out system. This item is considered closed. (See DETAILS, paragraph D.2.d)

75/05-5 Laboratory Counting Equipment Calibration Procedures

Calibration procedures have not been completed for the laboratory counting equipment. This item remains open. (See DETAILS, paragraph D.2.e)

75/05-6 Training

Radiological training has not been completed. This item remains open. (See DETAILS, paragraph D.2.f.)

V. Unusual Occurrences

None

VI. Other Significant Findings

None

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## VII. Management Interview

At the conclusion of the inspection on August 14, 1975, a management interview was held to discuss the inspection findings. The following AP&L personnel were in attendance.

J. W. Anderson, Plant Superintendent  
C. H. Halbert, Technical Support Engineer  
R. G. Carrol, Health Physics Supervisor  
L. Alexander, QC Engineer

The items discussed and the licensee's position with respect to these items, as applicable, follow.

1. Scope of Inspection

The inspector outlined the areas covered during the inspection.

2. Items of Noncompliance

The inspector identified the apparent item of noncompliance. (See DETAILS, paragraph E.4)

3. Status of Previously Report Unresolved Items

The licensee provided expected completion dates for outstanding unresolved items. (See DETAILS, paragraph D.2)

4. Calibration of Survey Team Counting Equipment

A licensee representative stated that calibration procedures for instrumentation used to analyze Emergency Team air samples will be revised. (See DETAILS, paragraph E.2.b)

5. Scope of Emergency Drills

A licensee representative stated that the scope of future emergency drills (e.g., involving off-site support agencies such as Arkansas Health Department, Arkansas Highway Patrol, etc.) will be reviewed. (See DETAILS, paragraph E.6)

6. Notification of Emergency Drills

A licensee representative stated that IE Region IV will be given prior notice for all future emergency drills.

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DETAILS

A. Persons Contacted

1. Arkansas Power and Light Company (AP&L)

J. W. Anderson, Jr., Plant Superintendent  
C. H. Halbert, Technical Support Engineer  
R. G. Carrol, Health Physics Supervisor  
D. C. Trimble, Training Coordinator  
L. Alexander, QC Engineer

2. Russellville Fire Department

D. Sacrey, Fire Chief

3. Energy Research and Development Administration

W. Smalley, Assistant for Emergency Preparedness, RAP-Region II.

4. St. Mary's Hospital, Russellville

D. C. Rains, Administrator

5. Arkansas Health Department

E. L. McGuire, Health Physicist

6. Pope County Sheriff Department

W. N. Abernathy, Sheriff

7. Arkansas Highway Patrol

A. D. Kendall, Dispatcher, Clarksville Station

B. Health Physics and Chemistry Organization

No changes have occurred in the Health Physics and Chemistry staff since that reported in IE Inspection Report No. 50-313/75-03.

C. Scope of Inspection

The purpose of this inspection was to review the Emergency Planning program and to complete the Radiation Protection inspection which was partially reported in IE Report 50-313/75-05.

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D. Licensee Action on Previously Reported Items

1. Items of Noncompliance

Control of Portable Radiation Survey Instruments

This item was reported in IE Inspection Report No's 50-313/75-03 and 50-313/75-05 and involved the development of a procedure which will establish calibration frequencies for survey instruments. The AP&L employee responsible for developing the procedure was on vacation. As a result, the status of the procedure was not determined. This item remains open.

2. Unresolved Items

a. 75/05-1 Radiation Levels at Restricted Area

Fence This item was reported in IE Inspection Report No. 50-313/75-05 and involved obtaining radiation levels at the restricted area fence as part of routine radiation survey procedures. A licensee representative stated that survey procedures are being revised to include measurements along the restricted area fence. It was estimated that these procedures should be completed and approved by early October, 1975.

b. 75/05-2 Air Sample Flow Rates

This item was reported in IE Inspection Report No. 50-313/75-05 and involved the determination air sampler flow rates. A licensee representative stated that a NBS type rotometer has been ordered. It was estimated that flow rate determinations will be completed by mid-September, 1975.

c. 75/05-3 Whole Body Counter Calibration Procedures

This item was reported in IE Inspection Report No. 50-313/75-05 and involved the development of written procedures for calibrating the whole body counting system. A licensee representative stated that this procedure will be completed by early October, 1975.

d. 75/05-4 TLF Calibration and Quality Control Procedures

This item was reported in IE Inspection Report No. 50-313/75-05 and involved the development of written procedures for

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calibrating the TLD system. Procedure No. 1303.85 has been developed which contains calibration and quality control requirements for the TLD system. The inspector reviewed the TLD calibration and quality control procedures. No discrepancies were noted. This item is considered closed.

e. 75/05-5 Calibration Procedures for Laboratory Counting Equipment

This item was discussed in IE Inspection Report No. 50-313/75-05 and involved the development of written procedures for calibrating laboratory counting equipment used to analyze health physics surveys. A licensee representative stated that the calibration procedure is presently being written. It was estimated that the procedure will be completed by early October, 1975.

f. 75/05-5 Training

This item was discussed in IE Inspection Report No. 50-313/75-05 and involved providing radiological training to employees whose job description requires that they receive such training. It was noted that since the previous inspection, radiological training sessions were held on June 20, 1975 and July 25, 1975. However, the licensee's training records indicated that the remaining individuals still have not received the necessary training.

<u>Name</u>	<u>Employment Date</u>
G. Fiser	5/74
P. Jacob	8/74
J. Orlicek	5/74
C. Shively	5/74
B. Baker	5/74
B. West	5/74

A licensee representative stated that the next radiological training session is set for September 3-5, 1975.

g. 75/03-1 Sample Losses in Gaseous Sample Delivery Lines

This item was discussed in IE Inspection Report No. 50-313/75-03 and involved the determination of sample loss in the gaseous sample delivery system. A licensee representative stated that nothing has been accomplished in regard to determining the amount of sample lost. An estimated completion date for this study was not set.

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h. 75.01-1 Effluent Monitoring System Tests

This item was discussed in IE Inspection Report No. 50-313/75-01 and involved the comparison of laboratory analyses versus process monitor indication for similar effluent releases. A licensee representative stated that these comparisons should be completed by mid-October, 1975.

i. 74/14-3 Radiation Levels Inside Reactor Containment

This item was discussed in RO Inspection Report No. 50-313/74-14 and involved radiation level in containment which exceeds design bases. A licensee representative stated that the status of this item is unchanged from the previous inspection. No completion date has been established.

E. Emergency Planning

1. Facilities and Equipment

a. Emergency Kits

The inspector examined the emergency kits maintained at the Control Room, Emergency Assembly Area, Emergency Control Center, Emergency Control Office, and Site Ambulance. The inventory of supplies and equipment to be maintained in each of the kits appears in Appendix J of the Emergency Plan. No inventory discrepancies were noted. The licensee's records indicated that an emergency kit inventory is performed each month. The results are recorded on forms H.P., 7.2, 7.3, and 7.4.

b. Emergency Control Centers

The inspector visited each of the emergency control centers listed in the Emergency Plan to verify that the specified equipment was available and operable. No discrepancies were noted.

c. Emergency Communication Equipment

The specified emergency communication equipment was examined and found to be operable.

d. Changes in Emergency Equipment and Facilities

Several changes to the Emergency Plan have occurred since the previous Emergency Planning Inspection. It was noted

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that changes were reviewed and approved by the Plant Safety Committee. The licensee's records indicated that copies of the changes were sent to the NRC and designated off-site support agencies.

2. Monitoring Instruments

a. Inventory

The instrumentation used to monitor radioactive releases was examined. Monitoring instrumentation consists of survey team equipment contained in the emergency kits and the plant stack monitor (RE 7400)

Survey team equipment is located at the Emergency Control Center and Emergency Assembly Area. Each kit includes a GM type detector, a count rate meter, and a sample counting chamber.

The stack monitor (RE 7400) includes two NaI detectors and associated display meters and strip chart recorders. The stack monitor read-out systems are located in the control room.

The inspector examined the specified monitoring equipment and verified that the equipment was available and operable.

b. Calibration

(1) Survey Team Equipment

The portable monitors maintained in the emergency kits are calibrated each quarter. In reviewing calibration procedure No. 1602.19, it was noted that the monitors designated to analyze air samples were not calibrated in the same configuration as would the case under emergency counting conditions. Under the present procedures, the survey team meters are calibrated in the same manner as other meters used for routine plant surveys.

A licensee representative stated that emergency survey meter calibration procedure will be modified to include calibration of the sampler holder, detector, and count rate meter as one unit.

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(2) Stack Monitor

Environmental Technical Specification 2.4.2.2 (Monitoring Requirements) requires that gas monitors be calibrated at least quarterly. The licensee's records indicated that RE 7400 was calibrated on the following dates:

June 6, 1974  
September 7, 1974  
December 10, 1974  
March 17, 1975  
June 30, 1975

Gas monitors are calibrated as per Procedure No. 1304.27 titled: "Process Radiation Monitoring System"

3. Medical

a. Treatment Facilities - Off-Site

The license has an agreement with St. Mary's Hospital, Russellville, to provide emergency medical treatment. The inspector visited St. Mary's hospital and verified that the agreement, dated May 15, 1972, between AP&L and the hospital remains in effect. The inventory of emergency supplies to equipment maintained at St. Mary's specified in Appendix E of the Emergency Plan was examined. No discrepancies were noted.

b. Treatment Facilities - On-Site

A first aid room is maintained near ANO-2. A list of first aid supplies and equipment appear in Appendix J-6. No discrepancies were noted.

c. Qualified Physicians

A St. Mary's hospital representative stated that the following physicians have received formal emergency radiological training.

J. M. Carter, M.D.  
K. O. New, M.D.  
R. M. Franklin, M.D.  
S. D. Teeter, M.D.

According to a hospital representative, all of the above physicians are presently on the St. Mary's staff.

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d. Ambulance Service

The licensee maintains an ambulance at the site. An inventory of supplies and equipment to be maintained in the Ambulance Emergency Kit is listed in Appendix J-5 of the Emergency Plan. No discrepancies were noted.

4. Training

a. On-Site Personnel

Section 5 of the Emergency Plan outlines the training program. Section 5.3 states, in part: "Training sessions are conducted semi-annually to insure that personnel are familiar with their duties and responsibilities assigned by the Emergency Plan and procedures..."

The licensee's training records indicated that training was conducted on the following dates:

<u>Team</u>	<u>Date Training Conducted</u>
Emergency Radiation Team	10/9/73 11/15/73 4/26/74
Medical and Decontamination Team	4/29/74 12/3/74
Emergency Fire Team	4/23/75 5/12/75 5/27/75
Emergency, Security and Evacuation Team	4/25/74
Duty Emergency Coordinators	4/29/74

As the above dates indicate, training was not conducted at the required frequency.

b. Off-Site Support Agencies

Section 5.4 of the Emergency Plan states, in part: "... Periodic reviews with local groups are held annually and as soon as possible following assignment of new key personnel to these local outside group."

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The licensee's records indicated that training was conducted on the following dates:

<u>Organization</u>	<u>Date Training Conducted</u>
Russellville Fire Department	9/16/74
	7/7/75
Yell County Sheriff	7/29/75
Pope County Emergency Services	6/10/75
St. Mary's Hospital	12/3/74
	11/19/74
Pope County Ambulance Service	2/3/75

5. Drills

a. Frequency

The licensee's records indicated that emergency drills were conducted on the following dates.

(1) December 3, 1974 - Medical Drill

Included transporting accident victim to St. Mary's Hospital for treatment.

(2) February 11, 1975 - Plant Evacuation

Included accountability procedures for AP&L and construction personnel.

(3) May 27, 1975 - Fire Emergency

b. Records

Records of the emergency drills were maintained by the licensee. These records included comments by AP&L personnel assigned to observe and evaluate the drills.

6. Contact with Off-Site Support Agencies

The following off-site support agencies were contacted by the inspector to determine if the licensee has maintained contact and coordination with the various agencies.

NRC Region II and IV  
RAP Region II

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Russellville Fire Department  
St. Mary's Hospital  
Arkansas State Department of Health  
Pope County Sheriff  
Arkansas Highway Patrol

Representatives from Russellville Fire Department, St. Mary's Hospital, and Pope County Sheriff stated that the licensee has established contact within the past year for the purpose of reviewing the Emergency Plan.

The Arkansas State Department of Health, NRC, RAP, and Arkansas Highway Patrol representatives stated that they have not been contacted during the past year.

7. Licensee QC Audits

The licensee's records indicated that an audit of ANO-1's Emergency Plan was conducted May 8-16, 1975. Some of the discrepancies noted were lack of a proper training program and copies of the Emergency Plan were not available at all designated locations.

F. Radiation Protection

The following is a continuation of the Radiation Protection items that were not covered during IE Inspection Report 50-313/75-05.

1. Material Inventory and Records

a. Sealed Sources

The following is a list of sealed sources that exceed 10 times the values listed in 10 CFR 20, Appendix C.

<u>Nuclide</u>	<u>Activity</u>	<u>Model</u>	<u>Date Received</u>	<u>Use</u>
137CS	50 Ci	Tech. Ops. 682	4/6/73	Calibration Source
137CS	39mCi	Trapelo Ax-4	2/73	"
137CS	100mCi	ICP-371	5/7/73	"
60CO	20UCi	Trapelo Ax-4	2/73	"
60CO	500mCi	MRC-Co-144	1/30/74	"
238 Pu-Be	4.71Ci	MRC-Pu-Be	1/16/75	"
238 Pu-Be	1Ci	Boronometer	1/14/74	"

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b. Records

The licensee's records indicated that receipt and accountability records are maintained on all radioactive materials. This included sealed and unsealed sources. Accountability information is recorded on Form H.P. 3-5. The license records indicate that approximately 131 individual sources are presently on site. Radioactive accountability procedures appear in Procedure No. 1002.29.

c. Leak Tests

Technical Specification 4.14 contains leak test requirements. Leak test records for the sources listed in the above item 1.a. were reviewed. The licensee's records indicated that leak tests were performed on August 26, 1974, November 19, 1974, and February 27, 1975. Tests results indicated that for any one source, the leakage was less than 0.005 microcuries. Leak test procedures are contained in Procedure No. 1602.34 titled: "Leak Test of Sealed Sources".

2. Instrument Calibration

The calibration records for Health Physics instruments such as portable meter, friskers, portal monitors, and hand and foot counters were examined.

The licensee's records indicated that Health Physics instruments are calibrated quarterly. A separate calibration procedure has been written for each type of instrument. These procedures appear in procedure No.s 1303.69 through .105. It was noted that except for a few high range gamma survey meters, each instrument is calibrated at two points on each range scale. Calibration results were recorded on Form H.P. 6.5.

3. Radioactive Shipments

Radioactive shipping records for the period July 1, 1974 through August 14, 1975 were examined. The licensee's records indicated that three solid waste shipments, consisting of filter resin and concrete contain in 55 gallon drums, were shipped on the following dates:

<u>Dates</u>	<u>Total Activity/Shipment</u>
7/7/75	336 mCi
7/9/75	337 mCi
7/11/75	520 mCi

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In addition to the above shipments, it was noted that several miscellaneous shipments (e.g., contaminated clothing, low activity waste, etc.) have also been made. Shipping procedure are contained in Procedure No. 1602.13 titled: "Shipment of Radioactive Materials". The following shipping forms are also part of the shipping procedures.

- a. "Chronological Log of Radioactive Materials Released"
- b. "Transmittal of Special/Non Routine Materials"

The licensee's shipping records and procedures were reviewed to determine compliance with 10 CFR 71 and D.O.T. regulations. No discrepancies were noted.

G. Analytical Measurements

Verification measurements were performed on the following types of samples:

- 1. Liquid Waste - Hold-up Tank T-16A
- 2. Gaseous Waste - Decay Tank T-18A
- 3. Charcoal Filter - From Stack Vent System
- 4. Particulate Filter - From Stack Vent System

The licensee's measurements are compared with measurements made by NRC's reference laboratory, Idaho Health and Safety Laboratory (IHSL). IHSL's measurement are referenced to the National Bureau of Standards by laboratory intercomparisons. Verification comparisons are only made for those nuclides identified by IHSL as being present in concentrations greater than 10% of the respective MPC's for liquid and gas samples and total activity per sample for stack particulate and charcoal filters. Attachment No. 1 contains the acceptance criteria.

The following table shows the comparison results.

- 1. Liquid (Waste hold-up tank T16 A - Collected June 12, 1975)

<u>Nuclide</u>	<u>NRC Measurement</u>	<u>ANO Measurement</u>	<u>Decision</u>
Gross			
Beta	$2.7 \pm 0.1 \times 10^{-5}$ uCi/ml	$5.42 \times 10^{-4}$ uCi/ml	disagreement
$^3\text{H}$	$6 \pm 0.01 \times 10^{-2}$ uCi/ml	$9.85 \times 10^{-2}$ uCi/ml	disagreement
$^{110\text{m}}\text{Ag}$	$9.3 \pm 0.4 \times 10^{-6}$ uCi/ml	$1.02 \times 10^{-5}$ uCi/ml	agreement
$^{137}\text{Cs}$	$5.7 \pm 0.2 \times 10^{-6}$ uCi/ml	$5.5 \times 10^{-6}$ uCi/ml	agreement
$^{131}\text{I}$	$5.1 \pm 0.2 \times 10^{-5}$ uCi/ml	$4.98 \times 10^{-5}$ uCi/ml	agreement
$^{58}\text{Co}$	$5.4 \pm 0.3 \times 10^{-6}$ uCi/ml	$6.34 \times 10^{-6}$ uCi/ml	agreement

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2. Gaseous (Gas Decay Tank T18A - Collected June 12, 1975)

<u>Nuclide</u>	<u>NRC Measurement</u>	<u>ANO-1 Measurement</u>	<u>Decision</u>
$^{133}\text{Xe}$	$4.9 \pm 0.2 \text{ uci/ml}$	$7.69 \times 10^{-1} \text{ uci/ml}$	disagreement
$^{133\text{m}}\text{Xe}$	$7.3 \pm 0.5 \times 10^{-5} \text{ uci/ml}$	$2.99 \times 10^{-3} \text{ uci/ml}$	disagreement
$^{85}\text{Kr}$	$9 \pm 1 \times 10^{-4} \text{ uci/ml}$	$4.33 \times 10^{-3} \text{ uci/ml}$	disagreement

3. Particulate Filter Stack Vent - Collected June 11, 1975)

Nuclide concentrations identified by IHSL were less than statistical reliability limits.

4. Charcoal Cartridge (Stack Vent - Collected June 11, 1975)

Nuclide concentrations identified by IHSL were less than statistical reliability limits.

ATTACHMENT NO. 1

Criteria for Comparing Analytical Measurements

The following is the criteria used in comparing the results of capability tests and verification measurements. The criteria are based on an empirical relationship established through prior experience and this program's analytical requirements.

In these criteria, the judgement limits vary in relation to the comparison of the resolution.

$$\text{Resolution} = \frac{\text{NRC Value}}{\text{NRC Uncertainty}}$$

$$\text{Ratio} = \frac{\text{Licensee Value}}{\text{NRC Value}}$$

Comparisons are made by first determining the resolution and then reading across on the same line to the corresponding ratio. The following table shows the acceptance values.

RESOLUTION	RATIO		
	<u>Agreement</u>	<u>Possible Agreement A</u>	<u>Possible Agreement B</u>
3	0.4 - 2.5	0.3 - 3.0	No comparison
4 - 7	0.5 - 2.0	0.4 - 2.5	0.3 - 3.0
8 - 15	0.6 - 1.66	0.5 - 2.0	0.4 - 2.5
16 - 50	0.75 - 1.33	0.6 - 1.66	0.5 - 2.0
51 - 200	0.80 - 1.25	0.75 - 1.33	0.6 - 1.66
>200	0.85 - 1.18	0.80 - 1.25	0.75 - 1.33

"A" criteria are applied to the following analyses:

Gamma Spectrometry where principal gamma energy used for identification is greater than 250 Kev.

Tritium analyses of liquid samples.

Iodine on adsorbers.

"B" criteria are applied to the following analyses:

Gamma Spectrometry where principal gamma energy used for identification is less than 250 Kev.

89Sr and 90Sr Determinations.

Gross Beta where samples are counted on the same date using the same reference nuclide.