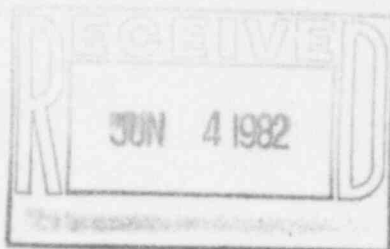




Public Service Company of Colorado

16805 WCR 19 1/2, Platteville, Colorado 80651



May 28, 1982
Fort St. Vrain
Unit No. 2
P-82167

Mr. John T. Collins, Regional Administrator
U. S. Nuclear Regulatory Commission
Region IV
Office of Inspection and Enforcement
611 Ryan Plaza Drive; Suite 1000
Arlington, Texas 76011

SUBJECT: Transmittal of Revised Scenario
and Observer Packages 1982 Exercise

Dear Mr. Collins:

As stated in our letter of May 25, 1982, we are transmitting herein, a revised scenario for the 1982 emergency preparedness exercise and the revised observer packages. Comprehensive review of the scenario and observer packages by my staff has shown the need for additional radiation monitoring parameters, as well as minor modifications to certain detector readings, in order to remain on track with our planned scope for the exercise. These changes do not alter the stated sequence of events, but provide additional assurance of a well planned exercise.

Questions with regard to the content of the scenario or observer packages should be directed to Mr. L. M. McBride at (303) 785-2224.

Very truly yours,

Don Warembourg
Manager, Nuclear Production

DWW/l sb

FSV RADIOLOGICAL EMERGENCY PREPAREDNESS ANNUAL EXERCISE

FOSAVEX 82-Narrative Summary

The exercise will be based upon a non-isolable leak in a reheat section on loop 2. This initiating event, when the determination is made that the leak is "non-isolable", would result in classification as a SITE AREA EMERGENCY, as described in Table 4.1-3, item 2, of the Fort St. Vrain RERP. The initial conditions at the time the leak occurs will be routine operation at 70% reactor power, PCRV pressure 650 psia. The determination that the leak is "non-isolable" will result from evaluation of a leakage path past valve HV-22132 to the main condenser. This valve will have been identified as leaking from alarm I-13A,5-8; LOOP 2 RHR STM TO CONDENSER VALVE LEAK. This alarm will be designated as "on" in a list of activated alarms given to control room operators prior to the onset of the initiating event.

The flow of exercise events is intended to be such that the initiating event will be the detection of a small amount of activity in secondary coolant at the Steam Jet Air Ejector. Approximately 10 minutes later, Reactor Building Ventilation radioactivity levels will increase, indicating offsite release. At this time, it is anticipated that personnel will be summoned to their emergency stations by the plant radiological alarm, and that a declaration of a NOTIFICATION OF UNUSUAL EVENT emergency class will follow shortly thereafter. At $t = 30$ minutes, the west reactor operator will be informed that the indication for Loop 1 Hot Reheat radiation monitor has begun to move upscale, and is currently reading approximately 200 cpm. The Loop 2 Hot Reheat radiation monitor is reading background (this monitor, under routine conditions, is set to monitor the steam generator interspace on loop 2, and, until monitoring is switched to the loop 2 Hot Reheat Header, will read background). At $t = 40$ minutes, the Reactor Building Ventilation monitor alarms on both RT-7324 1 & 2. The offsite release calculations will indicate that the event has reached the magnitude of an ALERT emergency classification, as the effluent release rate for noble gases is somewhat greater than 10 times the Technical Specification release rate limits. Release rates will rise only slightly over the next 45 minutes, until, at $t = 85$ minutes, the situation begins to deteriorate rapidly.

At $t = 85$ minutes elapsed time from the initiating event, the indications on the Steam Jet Air Ejector radiation monitor will take a rapid rise. The rate of increase on the Loop 1 Hot Reheat radiation monitor will not be appreciable. If the operator switches the loop 2 reheat monitor to monitor the Hot Reheat Header from the loop 2 Steam Generator interspace, this monitor will indicate upscale, with about a 10 minute lag behind the Steam Jet Air Ejector monitor (otherwise, the monitor will indicate background whenever it is monitoring the Steam Generator interspace). The offsite radiological release rate will increase somewhat at this time also. It is anticipated, that with indications of a large primary to secondary leak occurring, the Control Room will make the decision to shutdown the affected loop, if they have not already done so, based upon previous indications. If the operator shuts down loop 1, based upon the loop 1 Hot Reheat Header radiation monitor leakage, no appreciable change in radiation leakage or effluent rates will be noted. If the operator selects loop 2 for isolation based upon that loop's radiation indications, simultaneously with the loop shutdown, radiation readings will take a rapid swing upward again. Subsequent investigations of the leakage path will eventually lead to the conclusion that the leak is non-isolable due to the leakage past HV-22132 into the condenser. This determination should result in the declaration of a SITE AREA EMERGENCY. Shortly thereafter, a depressurization of the PCRV will begin. The depressurization will last for approximately 3 hours, with a steadily decreasing offsite radiological release rate continuing over the entire period. After the depressurization of the PCRV is completed, the radiation readings will return to normal levels, and the termination of the exercise will be declared.

Planned Sequence of Events for FOSAVEX 82 Scenario:

At approximately time $t = -10$ minutes, the operators in the control room will be given a list of alarms that are to be presumed to be up on the various annunciator panel windows. This list will include alarm I-13A,5-8; LOOP 2 RHT STM TO CONDENSER LEAK. There will be a sufficient number of alarms listed on this alarm sheet for systems that are both related and unrelated to the exercise scenario that it will not be readily apparent to operators prior to the onset of the exercise initiation that this particular alarm will serve to identify the leakage path.

At time $t = 0$ minutes, the following window on the annunciator panels will come on;

I-05B;5-6 --- AIR EJECTOR ACTIVITY HIGH (RAH-31193)

At the time this alarm window comes up, RI-31193 on I-05 is reading approximately 600 cpm.

At time $t = 10$ minutes, the operator is informed that the indication on RT-7324,1 is currently reading upscale at approximately 10K cpm, and that RT-7324,2 is currently reading approximately 300 cpm. The indications for RT-7325, 1 & 2 and RT-73437, 1 & 2 are remaining at background.

During the the time span from $t = 10$ minutes to approximately $t = 30$ minutes, the activity indications from RT-31193, and RT-7324, 1 & 2 will increase at a very gradual rate, until at $t = 30$ minutes, the operator is informed that the loop 1 Hot Reheat Header Monitor has begun to rise slightly. At that time, the following radiation values are noted;

	RT-31193	reading	4.00E+03 cpm;
	RT-2263	reading	2.00E+02 cpm;
	RT-2264	reading	background. (4.00E+02 cpm, if on HRH);
	RT-7324,1	reading	3.00E+04 cpm;
	RT-7324,2	reading	1.50E+03 cpm;
	RT-73437,1	reading	3.50E+02 cpm.
	RT-73437,2	reading	background;

At $t = 40$ minutes, the Reactor Building Ventilation noble gas monitors (RT-7324 1 & 2) alarm with the following indications noted on other radiation detectors;

	RT-31193	reading	2.00E+04 cpm;
	RT-2263	reading	2.00E+02 cpm;
	RT-2264	reading	background, (1.50E+03 cpm, if on HRH);
	RT-7324,1	reading	1.55E+06 cpm;
	RT-7324,2	reading	4.35E+04 cpm;
	RT-73437,1	reading	3.50E+02 cpm.
	RT-73437,2	reading	7.00E+02 cpm;

Other radiological monitors remain at, or near, their background values.

Sometime after time $t = 85$ minutes, the radiation readings on the various effluent and radiation process monitors will begin to increase again to the following values;

	RT-31193	reading	3.00E+05	cpm;
	RT-2263	reading	3.00E+02	cpm;
	RT-2264	reading	background, (2.00E+03 cpm, if on HRH);	
	RT-7324,1	reading	offscale high;	
	RT-7324,2	reading	6.25E+05	cpm;
	RT-73437,1	reading	4.20E+03	cpm;
	RT-73437,2	reading	1.00E+03	cpm;
	RT-93250-10	reading	≈ 1 mR/hr;	
	RT-93251-10	reading	≈ 1 mR/hr;	
	RT-93252-10	reading	≈ 1 mR/hr;	
	RT-93250-11	reading	≈ 2 mR/hr;	
	RT-93251-11	reading	≈ 2 mR/hr;	
	RT-93252-11	reading	≈ 2 mR/hr.	

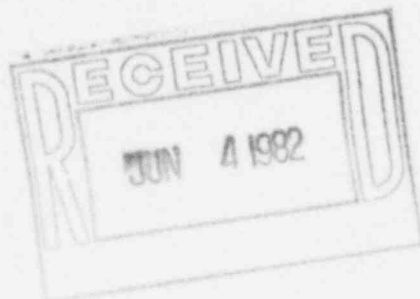
If the decision is made to shutdown loop 1, instead of the leaking loop 2, no significant change in radiation readings on the radiation effluent or radiation process effluent monitors will be noted. Sometime after loop 2 shutdown occurs, resulting in vastly increased radiation leakage rates, it will be determined that the leak is non-isolable. At that point, a SITE AREA EMERGENCY emergency classification will be declared. At that point in time, it would be determined that the best way to terminate the release is to depressurize the PCRV. From the time that decision is made, the exercise will last for approximately three more hours, as radiation levels begin to drop to background values. During the depressurization, it is anticipated that field teams will be assessing offsite radiological consequences.

Once radiation levels have decreased to background, and the PCRV has been depressurized, the exercise will be declared terminated.

Radiochemistry

Gamma Spectrometry Results
For RT-73437, 2 Filter

Peaks For Cs-138
Rb-88



HP/Radiochemistry

Observed Half life on removed
RT-73437, 2 Filter
20 minutes

(if this value is requested)

H.P. Access Observer

All Air Samples in Reactor Building
and Turbine Building read
Background Throughout Exercise

H.P. Access

Area Reading; Elevation 4864 Reactor
Plant Exhaust Filter Room.

T+85 200 mrem/hr

H.P. Access

Area Reading ; Elevation 4864 Reactor
Plant Exhaust Filter Room

T+145 400 mrem/hr

H.P. Access

Area Reading ; Elevation 4864 Reactor Plant
Exhaust Filter Room.

T+205 600 mrem/hr

H.P. Access

Area Reading ; Elevation 4864 Reactor Plant
Exhaust Filter Room.

T+265 800 mrem/hr

H.P. Access

Area Reading ; Elevation 4864 Reactor
Plant Exhaust Filter Room

T+325 1000 mrem/hr

H P Observer

Place on portable stack monitor
instrument: E-500

T+9.5 (≈ 0935) Reading 0.2 mR/hr.

Will retain this value until T+145

~~H. P. Observer~~

~~Place on portable stack monitor
instrument: E-500~~

~~T+9.5 Reading .2 mr/hr Will remain
at this value until T+145~~

HP Observer

Place on Portable Stack Monitor
instrument : E-500

$T + 175$ (≈ 1055) Reading 0.1 mR/hr

~~H.P. Observer~~

~~Place on Portable Stack Monitor
instrument : E-500~~

~~$T + 145$ Reading 0.1 mR/hr Will remain
at this value until $T + 175$~~

H. P. Observer

Place on portable stack monitor

instrument : E-500

T+95 Reading .3 mr/hr Will remain
at this value until T+145

H.P. Observer

Place on Portable Stack Monitor

instrument : E-500

T+145 Reading .1 mr/hr Will remain
at this value until T+175

H. P. Obsever

Place on Portable Stack Monitor

instrument : E-500

T+175 Reading Background throughout
remainder of exercise.

H.P. Observer

Place on Portable Stack Monitor

instrument: Cutie Pie

Reading Background Throughout
The exercise.

PCC Observer

Give to PCC HP Technician

PCC Radiation Readings are

Background Throughout the Exercise

PCC Observer EAB Team

Location EAB

Time - T+10 to T+30 minutes

EAB Radiation Survey .4 mrem/hr

Air Sample Background

All other Locations Background

Give to PCC HP Technician

PCC Observer - EAB Team

Location EAB

Time T+30 to T+40 minutes

Noble Gas (WB) 2 mrem/hr

I^{131} (Thyroid) (if available) $3 E - 13$ uci/cc

Give to PCC HP Technician

PCC Observer - EAB Team

Location EAB

Time T+50 to T+85 minutes

Noble Gas 50 mrem/hr

I^{131} $7.9 E - 12$ uci/cc

Give To PCC HP Technician EAB Team

PCC Observer - EAB Team

Location EAB

Time T+85 to T+145 Minutes

Noble Gas 700 mr/hr to 800 mr/hr steadily increasing

I^{131} $1 E - 10$ uci/cc to $2 E - 10$ uci/cc s steadily increasing

PCC Observer EAB Team

Location - EAB

Time T+145 to T+175 minutes

Noble Gas 800 to 300 mrem/hr steadily Decreasing

I^{131} $2E-10$ uci/cc to $5E-11$ uci/cc steadily decreasing

PCC Observer EAB Team

Location EAB

Time T+175 to T+205 minutes

Noble Gas 300 to 50 mrem/hr steadily decreasing

I^{131} $5E-11$ uci/cc to $8E-12$ uci/cc steadily decreasing

PCC Observer EAB Team

Location EAB

Time T+205 to T+235 minutes

Noble Gas 50 to 10 mrem/hr steadily decreasing

I^{131} $8E-12$ uci/cc to $1.5E-12$ uci/cc steadily decreasing

PCC Observer EAB Team
Location EAB

Time T+235 to T+265 minutes

Noble Gas 10 mrem/hr to Background

I^{131} 1.5 E-12 uCi/cc to Background ^{Steadily decreasing}
Steadily Decreasing

PCC Observer - EPZ team

Location - EAB

Time - T+30 to T+40 minutes

Noble Gas - 2 mrem/hr

I^{131} (if available) - 3.0 E-13 uCi/cc

PCC Observer - EPZ team

Location - EAB

Time - T+50 minutes

Noble Gas - 45 mrem/hr

I^{131} - 7.0 E-12 uCi/cc

PCC Observer-EPZ team

Location - EAB

Time - T+85 minutes

Noble Gas - 55 mrem/hr

I^{131} - 8.0×10^{-12} $\mu\text{Ci/cc}$

PCC Observer-EPZ team

Location - EAB

Time - T+85 to T+145 minutes

Noble Gas - 700 mrem/hr to 800 mrem/hr
steadily increasing

I^{131} - 1.0×10^{-10} $\mu\text{Ci/cc}$ to 2.0×10^{-10} $\mu\text{Ci/cc}$
steadily increasing

PCC Observer-EPZ team

Location - EAB

Time - T+145 to T+175

Noble Gas - 800 mrem/hr to 300 mrem/hr
steadily decreasing

I^{131} - 2.0×10^{-10} $\mu\text{Ci/cc}$ to 5.0×10^{-11} $\mu\text{Ci/cc}$
steadily decreasing

PCC Observer-EPZ team

Location - EAB

Time - T+175 to T+205

Noble Gas - 300 mrem/hr to 50 mrem/hr
steadily decreasing

I^{131} - $5.0E-11$ μ Ci/cc to $8.0E-12$ μ Ci/cc
steadily decreasing

PCC Observer-EPZ team

Location - EAB

Time - T+205 to T+235

Noble Gas - 50 mrem/hr to 10 mrem/hr
steadily decreasing

I^{131} - $8.0E-12$ μ Ci/cc to $1.5E-12$ μ Ci/cc
steadily decreasing

PCC Observer-EPZ team

Location - EAB

Time - T+235 to T+265

Noble Gas - 10 mrem/hr to background
steadily decreasing

I^{131} - $1.5E-12$ μ Ci/cc to background
steadily decreasing

PCC Observer-EPZ team

Location - 0.5 miles
Time - T+30 to T+40

Noble Gas - 1 mrem/hr
 I^{131} - $2.0E-13$ cps/cc

PCC Observer-EPZ team

Location - 0.5 miles
Time - T+50 to T+85

Noble Gas - 20 mrem/hr to 30 mrem/hr
steadily increasing
 I^{131} - $4.0E-12$ cps/cc to $5.5E-12$ cps/cc
steadily increasing

PCC Observer-EPZ team

Location - 0.5 miles
Time - T+95 to T+145

Noble Gas - 30 mrem/hr to 500 mrem/hr
steadily increasing
 I^{131} - $5.4E-12$ cps/cc to $1.0E-10$ cps/cc
steadily increasing

PCC Observer-EPZ team

Location - 0.5 miles

Time - T+145 to T+175

Noble Gas - 500 mrem/hr to 200 mrem/hr
steadily decreasing

I¹³¹

- 1.0E-10.4c/sec to 5.0E-11.4c/sec
steadily decreasing

PCC Observer-EPZ team

Location - 0.5 miles

Time - T+175 to T+205

Noble Gas - 200 mrem/hr to 30 mrem/hr
steadily decreasing

I¹³¹

- 5.0E-11.4c/sec to 5.0E-12.4c/sec
steadily decreasing

PCC Observer-EPZ team

Location - 0.5 miles

Time - T+205 to T+235

Noble Gas - 30 mrem/hr to 5 mrem/hr
steadily decreasing

I¹³¹

- 5.0E-12.4c/sec to 8.0E-13.4c/sec
steadily decreasing

PCC Observer - EPZ Team

Location - 0.5 miles

Time - T+235 to T+265

Noble Gas - 5 mrem/hr to background
steadily decreasing

I^{131} - 8.0×10^{-13} cps to background
steadily decreasing

PCC Observer - EPZ Team

Location - 1.0 miles

Time - T+30 to T+40

Noble Gas - 0.4 mrem/hr

I^{131} - Background

PCC Observer - EPZ Team

Location - 1.0 miles

Time - T+40 to T+60

Noble Gas - 0.5 mrem/hr

I^{131} - Background

PCC Observer - EPZ team

Location - 1.0 miles

Time - T+60 to T+~~115~~ 115

Noble Gas - 10 mrem/hr to 15 mrem/hr
steadily increasing

I¹³¹ - 2.0E-12 uCi/cc to 2.3E-12 uCi/cc
steadily increasing

PCC Observer - EPZ team

Location - 1.0 miles

Time - T+115 to T+145

Noble Gas - 175 mrem/hr to 225 mrem/hr
steadily increasing

I¹³¹ - 4.0E-11 uCi/cc to 5.0E-11 uCi/cc
steadily increasing

PCC Observer - EPZ team

Location - 1.0 miles

Time - T+145 to T+175

Noble Gas - 225 mrem/hr to 100 mrem/hr
steadily decreasing

I¹³¹ - 4.0E-11 uCi/cc to 2.0E-11 uCi/cc
steadily decreasing

PCC Observer - EPZ team

Location - 1.0 miles

Time - T+175 to T+205

Noble Gas - 100 mrem/hr to 20 mrem/hr
steadily decreasing

I¹³¹

- 2.0E-11 uCi/sec to 4.0E-12 uCi/sec
steadily decreasing

PCC Observer - EPZ team

Location - 1.0 miles

Time - T+205 to T+235

Noble Gas - 20 mrem/hr to 3 mrem/hr
steadily decreasing

I¹³¹

- 4.0E-12 uCi/sec to 6.0E-13 uCi/sec
steadily decreasing

PCC Observer - EPZ team

Location - 1.0 miles

Time - T+235 to T+265

Noble Gas - 3 mrem/hr to background
steadily decreasing

I¹³¹

- 6.0E-13 uCi/sec to background
steadily decreasing

PCC Observer - EPZ team

Location - 2.0 miles

Time - T+40 to T+70

Noble Gas - 0.2 mrem/hr ~~background~~
 I^{131} - background

PCC Observer - EPZ team

Location - 2.0 miles

Time - T+70 to T+85

Noble Gas - 5 mrem/hr to 6 mrem/hr
 I^{131} - 9.0E-13 MC/cc to 1.0E-12 MC/cc

PCC Observer - EPZ team

Location - 2.0 miles

Time - T+95 to T+125

Noble Gas 6 mrem/hr
 I^{131} 1.0E-12 MC/cc

PCC Observer - EPZ team

Location - 2.0 miles
Time - T+125 to T+155

Noble Gas - 70 mrem/hr to 80 mrem/hr
steadily increasing
 I^{131} - 2.0E-11 uCi/cc to 3.0E-11 uCi/cc
steadily increasing

PCC Observer - EPZ team

Location - 2.0 miles
Time - T+155 to T+185

Noble Gas - 80 mrem/hr to 40 mrem/hr
steadily decreasing
 I^{131} - 3.0E-11 uCi/cc to 2.0E-11 uCi/cc
steadily decreasing

PCC Observer - EPZ team

Location - 2.0 miles
Time - T+185 to T+215

Noble Gas - 40 mrem/hr to 8 mrem/hr
steadily decreasing
 I^{131} - 4.0E-12 uCi/cc to 7.0E-13 uCi/cc
steadily decreasing

PCC Observer - EPZ team

Location - 2.0 miles
Time - T+215 to T+245

Noble Gas - 8 mrem/hr to 1.5 mrem/hr
steadily decreasing
I¹³¹ - 4.0E-12 uCi/cc to 7.0E-13 uCi/cc
steadily decreasing

PCC Observer - EPZ team

Location - 2.0 miles
Time - T+245 to T+275

Noble Gas - 1.5 mrem/hr to background
steadily decreasing
I¹³¹ - 7.0E-13 uCi/cc to background
steadily decreasing

PCC Observer EPZ Team

Location 3 miles

Time T+40 to T+70 minutes

Noble Gas .1 mrem/hr throughout time

I¹³¹ Background throughout Time

Give to HP Tech EPZ Team

PCC Observer EPZ Team

Location 3 miles

Time T+70 to T+85 minutes

Noble Gas 2 to 3 mrem/hr increasing steadily

I^{131} $5E-13$ uci/cc to $6E-13$ uci/cc steadily
increasing

Give to PCC HP Tech EPZ Team

PCC Observer - EPZ Team

Location 3 miles

Time T+85 to T+135 minutes

Noble Gas 3 to 4 mrem/hr steadily increasing

I^{131} $5E-13$ uci/cc to $6E-13$ uci/cc steadily
increasing

PCC Observer - EPZ Team

Location 3 miles

Time T+135 to T+165 minutes

Noble Gas 40 to 50 mrem/hr steadily
increasing

I^{131} $6E-12$ uci/cc to $8E-12$ uci/cc steadily
increasing

PCC Observer - EPZ Team

Location 3 miles

Time T+165 to T+195 minutes

Noble Gas 50 to 30 m^r/hr steadily decreasing

I¹³¹ 8E-12 uci/cc to 4E-12 uci/cc steadily
decreasing

PCC Observer EPZ Team

Location 3 miles

Time T+195 to T+225 minutes

Noble Gas 30 to 6 m^r/hr steadily decreasing

I¹³¹ 4E-12 uci/cc to 8E-13 uci/cc
steadily decreasing

PCC Observer EPZ Team

Location 3 miles

Time T+225 to T+255 minutes

Noble Gas 6 to 1 mrem/hr steadily decreasing

I¹³¹ 8E-13 uci/cc to 1.5E-13 uci/cc
steadily decreasing

PCC Observer EPZ Team

Location 3 miles

Time T+255 to T+285 minutes

Noble Gas 1 mr/hr to Background decreasing

I^{131} $1.5E-13$ uci/cc to Background steadily decreasing

PCC Observer - EPZ Team

Location 4 miles

Time T+40 to T+70 minutes

Noble Gas .07 mr/hr throughout this time

I^{131} Background throughout this time.

PCC Observer EPZ Team

Location 4 miles

Time T+70 to T+85 minutes

Noble Gas 1.5 to 2 mrem/hr steadily increasing

I^{131} $1.5E-13$ uci/cc to $1E-13$ uci/cc
steadily increasing

Give to PCC HP Technician EPZ Team

PCC Observer EPZ Team

Location 4 miles

Time T+85 to T+145

Noble Gas 2 mrem/hr to 30 mrem/hr

I^{131} $1E-13$ uCi/cc to $3E-13$ uCi/cc
increasing steadily
increasing steadily

PCC Observer EPZ Team

Location 4 miles

Time T+145 to T+175 minutes

Noble Gas 30 mrem/hr to 35 mrem/hr

I^{131} $3E-12$ uCi/cc to $4E-12$ uCi/cc
increasing steadily
increasing steadily

PCC Observer EPZ Team

Location 4 miles

Time T+175 to T+205 minutes

Noble Gas 35 to 20 mrem/hr decreasing
steadily

I^{131} $4E-12$ uCi/cc to $2E-12$ uCi/cc
decreasing
steadily

PCC Observer EPZ Team

Location 4 miles

Time T+205 to T+235 minutes

Noble Gas 20 to 4 mrem/hr steadily decreasing

I^{131} $2E-12$ to $4E-13$ uCi/cc steadily decreasing

PCC Observer EPZ Team

Location 4 miles

Time T+235 to T+265 minutes

Noble Gas 4 to .7 mrem/hr decreasing steadily

I^{131} $4E-13$ uCi/cc to Background decreasing
steadily

PCC observer EPZ Team

Location 4 miles

Time T+265 to T+295 minutes

Noble Gas .7 mrem/hr to Background decreasing
steadily

I^{131} Background

PCC Observer EPZ Team

Location 5 miles

Time T+40 to T+70 minutes

Noble Gas 0.05 mrem/hr Throughout this time

I^{131} Background

Give to PCC HP Tech EPZ Team.

PCC Observer EPZ Team

Location 5 miles

Time T+70 to T+85

Noble Gas 1 to 1.25 mrem/hr increasing steadily

I^{131} $1E-13$ to $1.8E-13$ uCi/cc increasing steadily

PCC Observer EPZ Team

Location 5 miles

Time T+95 to T+154 Minutes

Noble Gas 1.5 mrem/hr to 2 mrem/hr increasing steadily

I^{131} $2E-13$ to $3E-13$ uCi/cc increasing steadily

PCC Observer EPZ Team

Location 5 miles

Time T+155 to T+184 minutes

Noble Gas 20 mrem/hr to 25 mrem/hr
increasing steadily

I^{131} $5E-12$ to $6E-12$ $\mu\text{Ci/cc}$ increasing
steadily

PCC Observer EPZ Team

Location 5 miles

Time T+185 to T+215 minutes

Noble Gas 20 mrem/hr to 15 mrem/hr
decreasing steadily

I^{131} $5E-12$ to $4E-12$ $\mu\text{Ci/cc}$
decreasing steadily

PCC Observer EPZ Team

Location 5 miles

Time T+215 to T+245

Noble Gas 15 to 3 mrem/hr decreasing
steadily

I^{131} $4E-12$ to $8E-13$ $\mu\text{Ci/cc}$
decreasing steadily

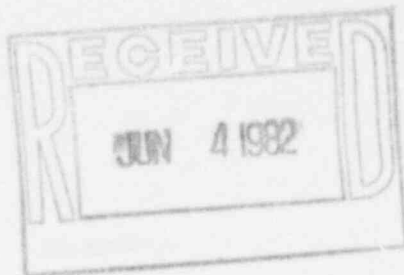
PCC Observer EPZ Team
Location 5 miles
Time T+245 to T+275 minutes
Noble Gas 3 to .5 mrem/hr decreasing
steadily
 I^{131} $8E-13$ $\mu\text{Ci/cc}$ to Background
steadily decreasing

PCC Observer EPZ Team
Location 5 miles
Time T+275 to T+305 minutes
Noble Gas .5 mrem/hr to Background
decreasing steadily
 I^{131} Background.

0750 or T-10 minutes

PCR V pressure

660 psia



0800 or T=0 minutes

PCR V pressure

660 psia

0810 or T + 10 minutes

PCR V pressure

658 psia

0830 or $T + 30$ minutes

PCR pressure

658 psia

0840 or $T + 40$ minutes

PCR pressure

655 psia

Time Depressurization
Starts (T_D)

PCR pressure

643 psia

$T_D + 30 \text{ minutes}$
where $T_D = \text{Time of Depressur-}$
ization start

PCR V Pressure
330 psia

$T_D + 1 \text{ hour}$

PCR V Pressure
190 psia

$T_D + 1.5 \text{ hours}$

PCR V Pressure
110 psia

T_D + 2 hours

PCR V Pressure

65 psia

T_D + 2.5 hours

PCR V pressure

35 psia

1310 or T + 310 minutes

Final Reading of
PCR V Pressure

12 psia

~0750 or T-10 minutes

RT 93250-3 alarmed
HSF Platform

~0750 or T-10 minutes

RT 93251-3 alarmed
HSF Blower Suction

~0750 or T-10 minutes

Attached list of Alarms to
Reactor Operators

20800 or T+0 minutes

Wind direction 250°

≈ 0750 or $T-10$ minutes

RT-7324, 1 $2E+1$

≈ 0750 or $T-10$ minutes

RT-7324, 2 ≈ 0

≈ 0750 or $T-10$ minutes

RT-73437, 1 ≈ 0

≈ 0750 or $T = 10$ minutes

$RT - 73437, 2 \approx 0$

≈ 0800 or $T = 0$ minutes

$RT - 7324, 1 \quad 2E+1$

$RT - 7324, 2 \quad \approx 0$

≈ 0800 or $T = 0$ minutes

$RT - 73437, 1 \approx 0$

$RT - 73437, 2 \approx 0$

≈ 0800 or T-0 minutes

Alarm I-05 B 5-6
Air Ejector Activity High

≈ 0800 or T-0 minutes

RI-31193 on I-05 reading
600 cpm

0810 or T+10 minutes

Stack Flow rate

31,000 cfm

throughout exercise

0810 or T+10 minutes

RT 7324-1 reading 10K cpm

0810 or T+10 minutes

RT 7324-2 reading 300 cpm

0810 or T+10 minutes

RT-7325-1 reading background

0810 or T+10 minutes

RT 7325-2 reading background

0810 or T+10 minutes

RT 73437-1 reading ~16cpm

0910 or T+10 minutes

RT 73437-1 reading background

0810 or T+10 minutes

RT 73437-2 reading background

0830 or T+30 minutes

Wind direction

230°

0830 or T+30 minutes

RT 31193 4.0 E+3 cpm

0830 or T+30 minutes

RT 31193 reading 2.00 E3 cpm

0830 or T+30 minutes

RT 2263 reading 2.082 cpm

0830 or T+30 minutes

CR observer - If RT 2264 is sampling interspace, post card ①. If sampling rehear, post card ②

0830 or T+30 minutes

①

RT-2264 reading background

0830 or T+30 minutes ②

RT 2264 reading 4.00 ± 2 cpm

0830 or T+30 minutes

RT 7324-1 reading 3.00 ± 4 cpm

0830 or T+30 minutes

RT 7324-2 reading 1.50 ± 3 cpm

0830 or T+30 minutes

RT 73437-1 reading 3.50 E 2 cpm

0830 or T+30 minutes

RT 73437-2 reading background

0840 or T+40 minutes

Wind direction 245°

0840 or T + 40 minutes

Alarm I-01C 1-1
Vent exhaust gas activity high

0840 or T + 40 minutes

Alarm I-03A 1-7
Vent exhaust gas activity 2 high

0840 or T+40 minutes

RT 31193 reading 2.00×10^4 cpm

0840 or T+40 minutes

RT 2263 reading 2.00E2 cpm

0840 or T+40 minutes

CR observer - If RT 2264 is sampling interspace, post card ①. If sampling reheat, post card ②.

0840 or T+40 minutes

①

RT 2264 reading background

0840 or T+40 minutes ②

RT 2264 reading 1.50 ± 3 cpm

0840 or T+40 minutes

RT 7324-1 reading 1.55 ± 6 cpm

0840 or T+40 minutes

RT 7324-2 reading 4.35 ± 4 cpm

0840 or T+40 minutes

RT 73437-1 reading $7.0E+2$ cpm

0840 or T+40 minutes

RT 73437-2 reading $7.0E+2$ cpm

0840 or T+40 minutes

all other monitors reading
background

0855 or T+55 minutes

Wind direction 260°

0855 or T+55 minutes

RT-7324,1 1.6 E+6 cpm

0855 or T+55 minutes

RT-7324,2 4.4 E+4 cpm

0855 or T+55 minutes

RT-73437,1 1.0 E+3 cpm

0855 or T+55 minutes

RT - 73437,2 $8.5E+2$ cpm

0855 or T+55 minutes

RT - 31193 $6.0E+4$ cpm

0910 or T+70 minutes

Wind direction 250°

0910 or T + 70 minutes

RT-7324, 1 $1.55 E + 6 \text{ cpm}$

0910 or T + 70 minutes

RT-7324, 2 $4.4 E + 4 \text{ cpm}$

0910 or T + 70 minutes

RT-73437, 1 $1.4 E + 3 \text{ cpm}$

0910 or T+70 minutes

RT-73437, 2 9. E+2cpm

0910 or T+70 minutes

RT-31193 6. E+4cpm

0925 or T+85 minutes

Wind direction 270°

0925 or T + 85 minutes

RT - 7324, 1 1.6 E + 6 cpm

0925 or T + 85 minutes

RT - 7324, 2 4.4 E + 4 cpm

0925 or T + 85 minutes

RT - 73437, 1 1.75 E + 3 cpm

0925 or T+85 minutes

RT-73437,2 9.25E+2cpm

0925 or T+85 minutes

RT-31193 6. E+4 cpm

0925 or T+85 minutes

RT-93250-10 }
RT-93251-10 } $\approx 1\text{mR/hr}$
RT-93252-10 }

These readings last until
 $\approx T+205$ minutes

0925 or $T+85$ minutes

$$\left. \begin{array}{l} RT-93250-11 \\ RT-93251-11 \\ RT-93252-11 \end{array} \right\} \approx 2mR/hr$$

These readings last until
 $\approx T+205$ minutes

0935 or T+95 minutes

Wind Direction 275°

0935 or T + 95 minutes

RT - 7324, 1 off scale high

0935 or T + 95 minutes

RT - 7324, 2 6.25 E + 5 cpm

0935 or T + 95 minutes

RT 73437-1 reads 4.2 E 3 cpm

0935 or T+95 minutes

RT-93251-1

Offscale high

35 or T+95 minutes

RT 73437-2 reads 1.00 E 3 cpm

0935 or T + 95 minutes

Values For RT-2264
will be $\approx 10^2$
lower than RT-31193
for duration of
exercise, only if the
monitor is on Loop 2HRH

0940 or T+100 minutes

Wind direction 280°

0940 or T+100 minutes

RT-7324-1 OFFscale High

0940 or T+100 minutes

RT-7324, 2 6.3 E+5cpm

0940 or T+100 minutes

RT-73437,2 - $3.5E+3$ cpm

0940 or T+100 minutes

RT-73437,1 $1.15E+4$ cpm

0955 or T+115 minutes

Wind direction 275°

0955 or T+115 minutes

RT-7324, 1 offscale high

0955 or T+115 minutes

RT-7324, 2 6.25 E+5cpm

0955 or T+115 minutes

RT-73437, 1 1.85 E+4cpm

0955 or T+115 minutes

RT-73437,2 $3.6E+3$ cpm

0955 or T+115 minutes

RT -31193 $6.E+5$ cpm

1010 or T+130 minutes

Wind direction 285°

1010 or T+130 minutes

RT-7324, 1 offscale high

1010 or T+130 minutes

RT-7324, 2 $6.4 E+5 \text{ cpm}$

1010 or T+130 minutes

RT-73437, 1 $2.5 E+4 \text{ cpm}$

1010 or T+130 minutes

RT-73437,2 3.6E+3cpm

1010 or T+130 minutes

RT-31193 7.0E+5cpm

1025 or T+145 minutes

Wind direction 290°

1025 or T+145 minutes

RT-7324, 1 offscale high

RT-7324, 2 $6.0 \text{ E}+5 \text{ cpm}$

RT-73437, 1 $3.2 \text{ E}+4 \text{ cpm}$

RT-73437, 2 $3.2 \text{ E}+3 \text{ cpm}$

RT-31193 $6.0 \text{ E}+5 \text{ cpm}$

1040 or T+160 minutes

Wind direction 280°

1040 o. T=160 minutes

RT - 7324, 1 offscale high

RT - 7324, 2 4.5 E+5 cpm

RT - 73437, 1 3.5 E+4 cpm

RT - 73437, 2 3.0 E+3 cpm

RT - 31193 4.0 E+5 cpm

1055 or T+175 minutes

Wind direction 295°

1055 o. T + 175 minutes

RT-7324,1 9.9 E+6cpm

RT-7324,2 3.0 E+5cpm

RT-73437,1 3.8 E+4cpm

RT-73437,2 2.0 E+3cpm

RT-31193 2.5 E+5cpm

LHO or T+190 minutes

Wind direction 285°

1110 or T+190 minutes

RT-7324, 1 $3.2 \text{E} + 6 \text{ cpm}$

RT-7324, 2 $1.0 \text{E} + 5 \text{ cpm}$

RT-73437, 1 $3.9 \text{E} + 4 \text{ cpm}$

RT-73437, 2 $9.0 \text{E} + 2 \text{ cpm}$

RT-31193 $9.0 \text{E} + 4 \text{ cpm}$

1125 or T+205 minutes

Wind direction

280°

1125 or T+205 minutes

RT 7324, 1 $1.5 E+6 \text{ cpm}$

RT 7324, 2 $5.0 E+4 \text{ cpm}$

RT 73437, 1 $3.95 E+4 \text{ cpm}$

RT 73437, 2 $7.0 E+2 \text{ cpm}$

1125 or T+205 minutes

RT -31193 $5.0 E+4 \text{ cpm}$

1125 or T+205 minutes

RT-93250-10 }
RT-93251-10 } $\approx 0.5 \text{ mR/hr}$
RT-93252-10 }

1125 or T + 205 minutes

RT-93250-11
RT-93251-11
RT-93252-11

} $\approx 1 \text{ mR/hr}$

1140 or T+220 minutes

Wind direction 270°

1140 or T+220 minutes

RT-7324,1 6.4 E+5 cpm

RT-7324,2 1.9 E+4 cpm

RT-73437,1 4.0 E+4 cpm

RT-73437,2 3.0 E+2 cpm

1140 or T+220 minutes

RT-31193 2.0 E+4 cpm

1140 or T+ 220 minutes

RT-93250-10 }
RT-93251-10 } $\approx 0.5 \text{ mR/hr}$
RT-93252-10 }

1140 or T+ 220 minutes

RT-93250-11 }
RT-93251-11 } $\approx 0.5 \text{ mR/hr}$
RT-93252-11 }

L155 or T+235 minutes

Wind direction 285°

1155 or T + 235 minutes

RT-7324,1 $3.1 \text{E}+5 \text{cpm}$

RT-7324,2 $1. \text{E}+4 \text{cpm}$

RT-73437,1 $4.0 \text{E}+4 \text{cpm}$

RT-73437,2 $2.0 \text{E}+2 \text{cpm}$

1155 or T + 235 minutes

RT-31193 $9.0 \text{E}+3 \text{cpm}$

1155 or T + 235 minutes

RT-93250-10 }
RT-93251-10 } background
RT-93252-10 }

1155 or T+235 minutes

RT-93250-11 }
RT-93251-11 } background
RT-93252-11 }

1210 or T+250 minutes

Wind direction 290°

1210 or T + 250 minutes

RT-7324, 1 $1.7 E+5$ cpm

RT-7324, 2 $5.3 E+3$ cpm

RT-73437, 1 $4.0 E+4$ cpm

RT-73437, 2 $1.5 E+2$ cpm

1210 or T + 250 minutes

RT-31193 $4.0 E+3$ cpm

RT-93250~~2~~, 10 } background
RT-93250~~2~~, 11 } for
duration
of
exercise

1225 or T+265 minutes

Wind direction 280°

1225 or T+265 minutes

RT-7324,1 $2.0 \text{ E}+4 \text{ cpm}$

RT-7324,2 $7.0 \text{ E}+2 \text{ cpm}$

RT-73437,1 $4.0 \text{ E}+4 \text{ cpm}$

RT-73437,2 $1.0 \text{ E}+2 \text{ cpm}$

1225 or T+265 minutes

RT-31193 $5.0 \text{ E}+2 \text{ cpm}$

1240 or T+280 minutes

Wind direction 285°

1240 or T+280 minutes

RT-7324, 1	$3.5 E+3 \text{ cpm}$
RT-7324, 2	$1.0 E+2 \text{ cpm}$

RT-73437, 1	$4.0 E+4 \text{ cpm}$
RT-73437, 2	$7.0 E+1 \text{ cpm}$

1240 or T+280 minutes

RT-31193	$1.0 E+2 \text{ cpm}$
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1355 or T+295 minutes

Wind direction 290°

1255 or T+ 295 minutes

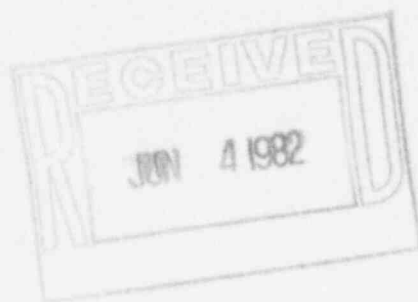
RT - 7324, 1	6.4 E+2 cpm
RT - 7324, 2	2.0 E+1 cpm
RT - 73437, 1	3.95 E+4 cpm
RT - 73437, 2	5.0 E+1 cpm

1255 or T+ 295 minutes

RT - 31193	4.0 E+1 cpm
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1310 or T+310 minutes

Wind direction 290°



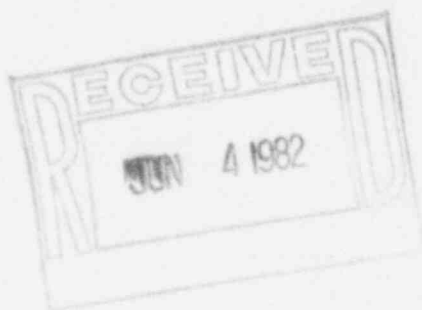
1310 or T+310 minutes

RT-7324, 1 $2.0 E+1 \text{cpm}$

RT-7324, 2 ≈ 0

RT-73437, 1 $3.95 E+4 \text{cpm}$

RT-73437, 2 $2.0 E+1 \text{cpm}$



1310 or T+310 minutes

RT-31193 ≈ 0