ATTACHMENT 9.1 **INITIAL INVESTIGATION**

Sheet 1 of 4

Troubleshooting Plan for H-3 investigation, Storm Drain System A, March/April 2009

Problem Descriptions on the WR/WO/CR or other actions:

CR-IP3-2009-01609 (3/25/9) identified unexpectedly high H-3 results in A system storm drains.

Discussions with Operators, System Engineers or Maintenance Personnel:

Communicated with Ops, Engineering, RP, WM, and Chem. An overflow of CVCS water was identified on Feb 4, 2009, inside the CVCS tank area of the PAB. Communicated with site hydrologists. H-3 migration into storm drains from this event is possible, but unlikely due to elevation differences. Therefore investigation is ongoing, looking at buried pipes, unreported spills, groundwater contamination in the area, etc. A troubleshooting plan was suggested to ensure proper communication and provide the teamwork needed for this investigation.

As Found Condition:

Multiple samples were taken to confirm the H-3 contamination. Drain A-2 was the highest, at 90,000 pCi/L (nominal is < 1000). This drain was stagnant, as is its normal condition. Drains downstream showed the expected dilution from what appears to be introduction at A1 or A2 (see diagram). No immediate source or indication of surface water leaks/spills could be identified. The overflow of CVCS water in early Feb is being evaluated, but it was determined that the storm drain water is more than 15 feet higher than the suspected level of H-3 from this overflow, inside the PAB. Other sources of possible ingress are the U3 RWST, the U3 SFP, the U3 SFP truck bay (liquid waste processing), and the 95' hill (washing down past the RWST to the A system area roadway).

This storm drain system empties into A-6 drain, which does NOT retain water long, passing it quickly to the E system, where it drains down the old U3 roadway to the old U3 command post area, and into the discharge canal. No activity (gamma or H-3) has been identified in the E system. This system involves significant dilution, so the absence of H-3 in E system was not surprising. The source of the Storm Drain Tritium contamination was not immediately known, but suspected as a function of washout.

EQUIPMENT RESPONSE INFORMATION GATHERING

Equipment ID		Expected Response	Actual Response
Storm	3-25-9	~ 1000 pCi/L H-3	4330 pCi/L H-3
Drain A-1	4-1-9	~ 1000 pCi/L H-3	5890 pCi/L H-3
Storm	3-25-9	~ 1000 pCi/L H-3	21,600 pCi/L H-3
Drain A-2	4-1-9	~ 1000 pCi/L H-3	94,200 pCi/L H-3
Storm	3-25-9	~ 1000 pCi/L H-3	1900 pCi/L H-3
Drain A-4	4-1-9	~ 1000 pCi/L H-3	17,600 pCi/L H-3
Storm Drain A-6	3-30-9 (or 3-25?)	~ 1000 pCi/L H-3	2160 pCi/L H-3
(No water available for sample on 4-1-9)			

PROBLEM STATEMENT:

Tritium at these levels is not expected in these drains, which collect mostly runoff surface water between the 95' hill and the PAB/FSB wall. While this H-3 introduction may have been from a one-time event, it may also be from underground piping or an unknown source.

OBSERVATIONS:

1. Overflow of CVCS water on Feb 4 would have had to rise more than 15 feet to reach drain A-2. There is currently no credible method for this transition.

2. No standing water or evidence of leakage from RAMS, Annex, or FSB.

3. No evidence of RWST or other leakage, on the surface, from the 95' hill.

4. RWST was placed on recirc 2/9/09. The tank was purposefully overflowed thus filing the overflow line as part of this evolution.

5. A pipe integrity test was conducted in late March, on the RHR pump line to RWST. This test's acceptance criteria is 7 gallons per hour.

6. See attached specific chemistry sampling timeline.

Initial Chemistry Sampling Timeline, Feb -April 2009

Date	Time	Events
04 Feb 09	03:55	32 Mon Tank pumped back to WHUT, 1700 gal overflowed to floor and sump.
		Mn-54: 1.92E-6 Co-60: 5.25E-5 H-3: 0.674 uCi/ml
11 Feb 09	20:40	Quarterly test of Storm Drain A-4 indicated slightly elevated H-3
19 Feb 09	10:35	Requested verification sample of A-4 H-3 indicated < mda (<6.39E-7 uCi/ml)
25 Mar 09	14:30	Sampled all site Storm Drains for Annual Inspection. No gamma.
28 Mar 09	12:00	Tritium samples prepared for weekly run on Liq Scin.
30 Mar 09	18:00	Spvr and Staff aware of first reported elevated H-3 in A-1, A-2, A-4, (and A-6?).
31 Mar 09	08:00	Investigating false positive, chemiluminescence, pH, & lab issues, etc.
31 Mar 09	14:00	samples collected for shipment offsite, for H-3 confirmation, and other beta.
01 Apr 09	08:30	multiple re-samples, prepared and counted immediately, verified 1st results.
02 Apr 09	09:00	more re-samples, taken after some precipitation. Prepared and counted ASAP.
03 Apr 09	10:00	Last set of samples slightly higher in H-3. Data considered valid. CR 1609 entered 1530 hr
03 Apr 09	21:00	D Mayer briefing/telecon NRC Regional personnel (CR-IP3-09-1609)
04 Apr 09	01:30	Email Message Mayer to McCafrey, action items for weekend investigative activities

CONCLUSIONS:

The most likely cause of the elevated H-3 in the effected storm drains was determined to be an accumulation of liquid H-3 condensation from the various airborne vents (washout), and the relative dry period before water was accumulated in effected drains (week of March 18-25, 2009.)

In an effort to ensure all possibilities were evaluated, the investigation also covered many other potential sources, including leaks or spills. In addition to storm water, several groundwater samples were collected at various depths throughout the area, and sent off for analyses. It conjunction with the bulk of our surveys in the area, it is expected that this information will help us verify the nature of the H-3 washout effect. Groundwater results are due back in late July, 2009.

The predominance of OE covering the washout phenomenon, the absence of any other indication of an introduction of H-3 to the drains, and the speed at which it dilutes to less than detectable levels - led us to believe that we simply identified a process that has been ongoing, but has no effluent contribution above what is already being conservatively quantified. Washout is not subtracted from airborne dose calculations and any liquid contribution is again included and reported in the annual assessment. Slightly elevated storm drain H-3 at key periods of dry weather and subsequent heavy rains, appears more connected with the ability to effectively monitor for pipe/tank integrity issues per NEI 07-07. As such, some corrective actions will follow to ensure appropriate response when this phenomenon is experienced.

ACTIONS/RESULTS:

1. ACTION:

Engineering evaluation is needed on lines 155, 181, 252, and 161, to and from the RWST in addition to the aux steam and condensate return lines used for tank heating. The RWST lines are suction to SI/RHR, suction to VC spray, RWST overflow, and the 3" recirculation return line (also part of the purification loop). Are lines all Stainless steel? What is exact elevation? Do any of these lines have tell tale drains from an outer containment pipe? Do they come in contact with the actual storm drain pipe?

Applicable drawings:

	Line No.	Dwg No.	Type of Drawing
1	Line 155	9321-F-26313, 26323 and 26553	Piping Arrangement Layout
2	Line 181	9321-F-26313, 26323 and 26553	Piping Arrangement Layout
3.	Line 252	9321-F-26313, 26323 and 26553	Piping Arrangement Layout
4.	Line 161	9321-F-26313, 26323 and 26553	Piping Arrangement Layout

EXPECTED RESULTS:

Lines are not degraded or leaking.

ACTUAL RESULTS:

16"- Line 155	Suction to SI/RHR	304 SS, 0.375" wall
12" - Line 181	Suction to VC spray	304 SS, 0.375" wall
6" - Line 252	RWST overflow	304 SS, sch 40S (0.280" wall)
3" - Line 161	3" return line and part of purification loop	304 SS, sch 40S (0.0.216" wall)

Four lines are Stainless Steel, Pipe Class 151R. Design Conditions:

Pressure:	150 psig	210 psig	240 psig
Max. Temp:	500 °F	300 °F	200 °F

These 4 lines are approx. 6 feet below grade for their entire length They run in parallel in a southerly direction approx. 6 feet below grade @ El. 48 ft. Line 252 continues in southerly direction to the Waste Holdup Tank Pit. The other 3 lines turn west at the northwest corner of the Waste Holdup Tank Pit, continuing to the Fuel Storage Building at El. 45 ft.

There is other underground piping that runs in parallel with the RWST lines identified above that are associated with RWST tank heating:

6" Line 561	Steam line	Class P-2:	A-53 CS, 0.280" wall
2" Line 278	Condensate Return	Class 151R:	304 SS, 0.154" wall

These 2 lines are routed side by side, encased in a 16" pipe conduit (dwg 9321-F-26323, Detail B).

2. ACTION:

Determine the depth of the "A" storm lines. Compare RWST pipe runs to these lines. What is depth of bottom seam in WHUT room, where overflow may have been most involved?

EXPECTED RESULTS:

Lines do not touch or involve galvanic corrosion. Downward pitch in A system from A-1/A-2. Review may Identify any channels or unique water transporting methods (old pipes?) that may move water into the A system drains, other than from surface runoff.

ACTUAL RESULTS:

Drawing 9321-F-26323, Section A-A shows a 12" storm sewer (A2 to A4) invert @ El. 49.82 ft. at the point that it crosses over the 3 lines. Section X-X on the drawing shows that 16" Line 155 has 4 in. thick mineral wool and 2" foam-glass covers over the 16" Line 155. This line shown being above the RWST lines, but it would be immediately above the 16" covered line.

The floor of the WHUT Pit structure is @ El. 33 ft. (Ref 9321-F-26563, Section C-C)

3. ACTION:

Evaluate the pipe integrity test, to determine if frequency or specific acceptance criteria can help us pin down a potential source of leakage.

EXPECTED RESULTS:

Leakage test does not indicate leakage to the environment.

ACTUAL RESULTS:

3PT-R178, "Alternate SI Low Head to High Head Recirc Piping Leak Test," was performed SAT on 3/22/09. The test is performed every refuel outage. The test verifies the integrity of the alternate path from the RHR pump discharge to the suction of 32 SI Pump via the RWST discharge piping and SI-898. The buried portion of 16 inch Line 155 is in the test boundary.

In addition to testing SI-846 and SI-MOV-882, the test verifies the seat leakage of SI-846 is less than7 gph OR that the combined RWST leakage through SI-846, SI-842 and SI-843 is less than 9 gph. The 3/22/09 SI-846 leakage rate was 6.02 gph. Test also measures 3PT-C01 leakage (Primary Coolant Sources Outside Containment - Total Leakage Rate Monitoring Tabulation)

Summary of last performances of 3-PT-R178:

	SI-847 Leakage (A/C)	3-PT-C01 Leakage
3/22/09	6.02 gph (≤ 7.0 gph)	0.1657234 gph (≤ 1.9 gph)
3/15/07	4.21 gph (≤ 7.0 gph)	0.1657234 gph (≤ 1.9 gph)
3/24/05	2.06 gph (≤ 7.0 gph)	

4. ACTION:

Evaluate the RWST overflow line, filled before every outage, and the water ported over to the CVCS sump. With ground water contour mapping, consult with hydrologist with regard to scenarios involving a leak from this line. Include in investigation potential for splashing of RWST water during overflow conditions where overflow line discharge coming out of tank is funneled to underground piping.

EXPECTED RESULTS:

No indication of leakage from recirc or overflow lines.

ACTUAL RESULTS:

Overflow line is not under pressure, and is filled approximately a month before each outage. Leaks from this line can be detected from local groundwater sampling. Hydrological studies are not yet complete, but so far, there is no evidence of an underground leak in the area. Sample results are pending, see Action #11.

5. ACTION:

Interview Ops regarding all work/testing/lineup modifications in Feb/Mar that may have involved water running down the hill into A system storm drains. Perform a walkdown of the outside area for evidence of surface runoff or leaks

EXPECTED RESULTS:

No credible source of groundwater contamination.

ACTUAL RESULTS:

On 4/2,approx 20:00, various Ops personnel and station oversight individuals identified that contamination was not likely from these events. On 4/3, a walkdown was completed with no evidence of undue runoff, standing water, or leakage from plant systems. In addition, the secondary side of the BUSFCS was tested to confirm H-3 activity levels; levels were normal.

6. ACTION:

Obtain Monitoring Well samples in the effected area, including transducer readings for any changing conditions over last several months.

EXPECTED RESULTS:

H-3 activity at various depths consistent with historical levels. If not, then evaluate the possible communication between storm drains and ground water.

ACTUAL RESULTS:

Monitoring Well samples were taken at MW 38, 39, 41, 43, 44, 45, U3-T1, and U3-T2. Results are expected before July 2009, and will be documented under Action Item #11.

7. ACTION:

Continue sampling storm drains for gamma and H-3. Consider pumping out existing water in A-2 and looking at how rapidly it returns, in conjunction with precipitation. Compare daily rainfall versus H-3 activity in key drains. Compare ongoing H-3 activity with rainfall, dilution, or potential recharge. Send storm water out for offsite analyses to verify H-3, and also for other beta-emitters.

EXPECTED RESULTS:

H-3 activity should subside and approach baseline if this was a one-time event. May reside longer if there is an ongoing leak. Evidence of gamma may help pinpoint source.

ACTUAL RESULTS:

No gamma has been detected, in the water in any drain. Typical spring rainfall has occurred since Mar 30, usually some every day. WinCDMS shows trends for H-3 analyses results and notes precip. This chart summarizes H-3 data in A-series drains, in uCi/ml (MDA for this analysis is approx 7E-7 uCi/ml):

Date	A-1	A-2	A-2A	A-3	A-4	A-6	E-1
1/19/2006	<mda	<mda	na	na	1.19E-06	6.86E-07	na
10/19/2006	6.71E-07	8.15E-07	na	<mda	1.49E-06	7.00E-07	na
3/10/2007	Dry	dry	na	na	<mda	na	na
7/9/2007	na	na	na	na	<mda	na	na
8/20/2007	na	na	na	na	<mda	na	na
11/16/2007	na	na	na	na	<mda	na	na
2/15/2008	na	na	na	na	2.46E-06	na	na
2/27/2008	na	na	na	na	<mda	na	na
4/7/2008	7.03E-07	7.03E-07	na	3.86E-06	7.81E-07	na	<mda
5/12/2008	na	na	na	na	1.06E-06	na	na
8/12/2008	na	na	na	na	<mda	na	na
11/10/2008	na	na	na	na	<mda	na	na
2/11/2009	na	na	na	na	1.74E-06	na	na
2/19/2009	na	na	na	na	<mda	na	na
3/25/2009	4.33E-06	2.16E-05	na	<mda	1.90E-06	Dry	<mda
3/30/2009	5.36E-06	9.08E-05	na	na	na	1.16E-05	na
4/1/2009	5.89E-06	9.42E-05	na	na	1.76E-05	3.71E-06	na
4/2/2009	**8.03E-06**	**1.89E-05**	**←(for confirmation)→**		**7.96E-06**	**← Analyzed at GEL**	
4/4/2009	8.96E-07	1.97E-06	7.09E-07	na	1.14E-06	1.14E-06	
4/12/2009	6.24E-07	7.94E-07	na	na	6.73E-07	6.24E-07	na

Water was pumped out of A-1 and A-2 on 4/5/9 to a drum. **Water did NOT fill back up, and there was no evidence of new ingress**. This information points to a discreet event (one-time H-3 introduction to A-2 drain, in mid March, 2009). Storm Drain water was sent offsite to GEL on April 2. GEL's results confirm our analyses results for H-3, and did NOT identify other gamma or beta emitting isotopes.

Summarizing GEL's results, in pCi/L: / ---------- MDA ----------\

Date	ID	H-3	Cs-137	Sr-90	Ni-63
4/2/2009	Storm Drain A-1	**8030 ± 665**	1.10 ± 1.92	0.272 ± 0.434	-7.56 ± 11.1
4/2/2009	Storm Drain A-2	**18900 ± 964**	0.425 ± 1.59	0.579 ± 0.384	-6.38 ± 11.1
4/2/2009	Storm Drain A-4	**7960 ± 662**	-0.477 ± 1.87	0.224 ± 0.528	-9.58 ± 11.1

Groundwater samples were also collected and sent to GEL. These results are expected in July or August, 2009, and will be captured in a separate CA, per Action #11.

MET data over the interval shows a long dry period, followed by significant precipitation at the end of March. The lack of precipitation is a known contributor to what appears to be a concentrating mechanism with regard to surface concentrations from washout and runoff.

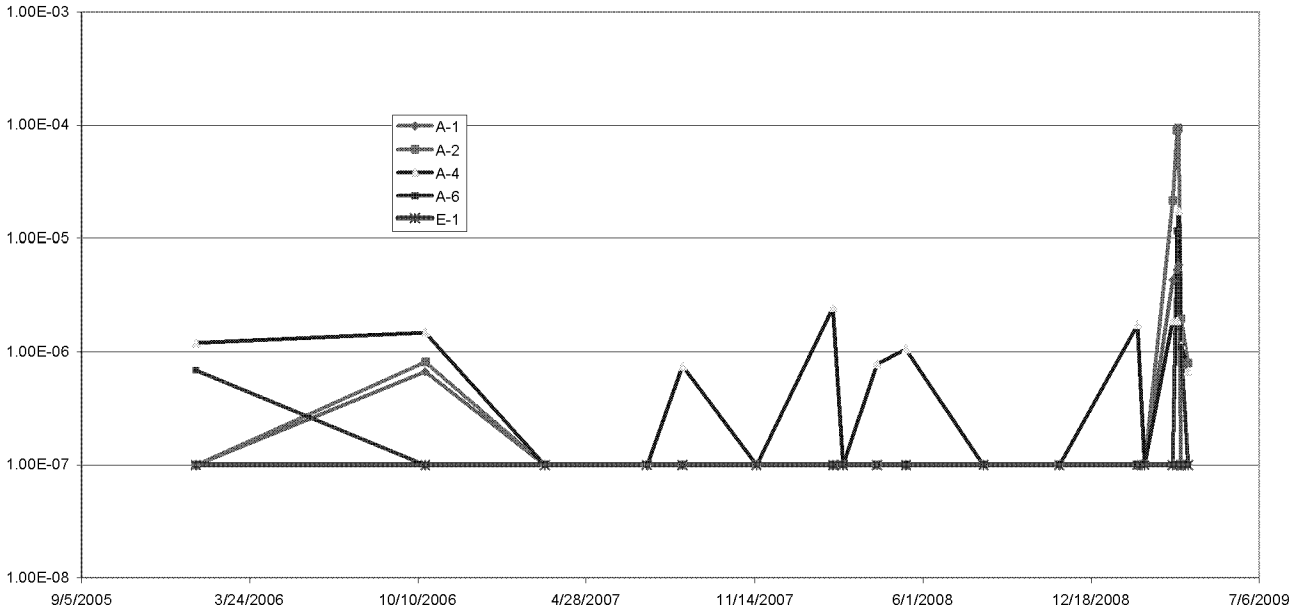
March 2009	Precipitation (inches)
3/1/2009	0
3/2/2009	0.08
3/3/2009	0
3/4/2009	0
3/5/2009	0
3/6/2009	0
3/7/2009	0
3/8/2009	0.02
3/9/2009	0.1
3/10/2009	0
3/11/2009	0
3/12/2009	0
3/13/2009	0
3/14/2009	0
3/15/2009	0

March 2009	Precipitation (inches)
3/16/2009	0
3/17/2009	0
3/18/2009	0
3/19/2009	0.02
3/20/2009	0
3/21/2009	0
3/22/2009	0
3/23/2009	0
3/24/2009	0
3/25/2009	0
3/26/2009	0.2
3/27/2009	0
3/28/2009	0
3/29/2009	0.47
3/30/2009	0
3/31/2009	0

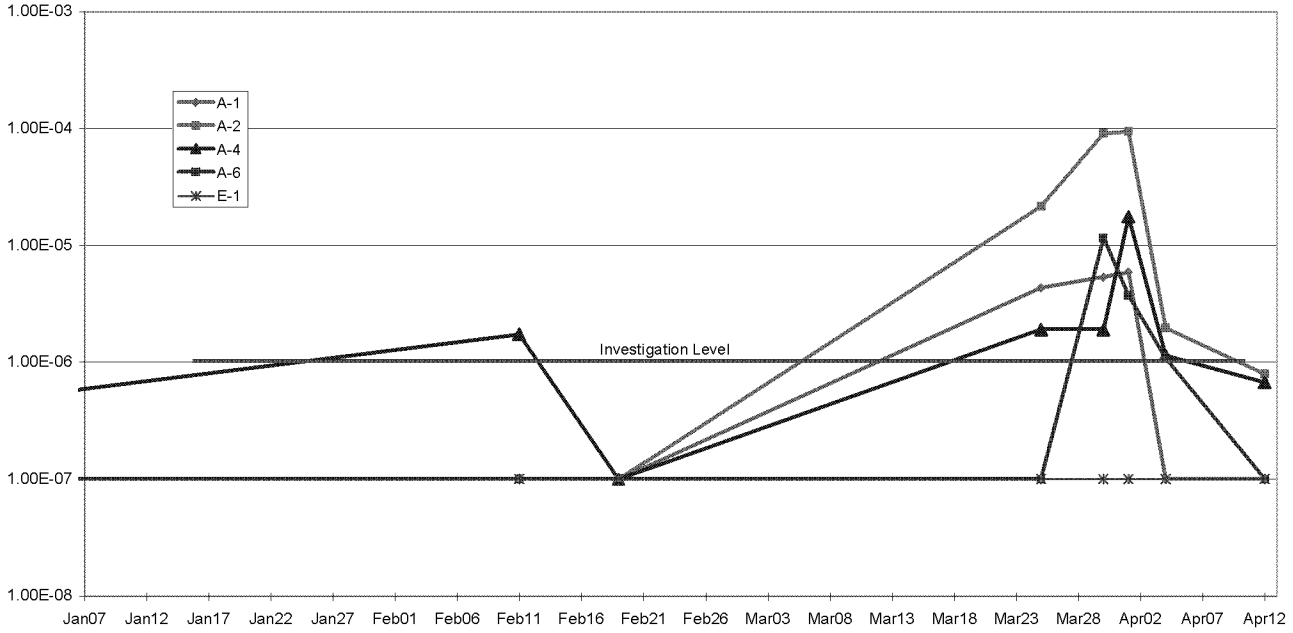
March Total:	0.89	inches

Graphical representations of H-3 in A series storm drains are shown on the following pages. Drain A-4 indicates that there may have been a historical presence of washout in this system, perhaps connected to atmospheric conditions in the FSB. While we may consider altering sample collection periodicity to better observe this phenomenon in the future, the collective data continues to indicate that (probably due to dilution down E series), there is no EFFLUENT concern as all samples into the canal are <mda.

U3 Storm Drain A series, 2006-2009

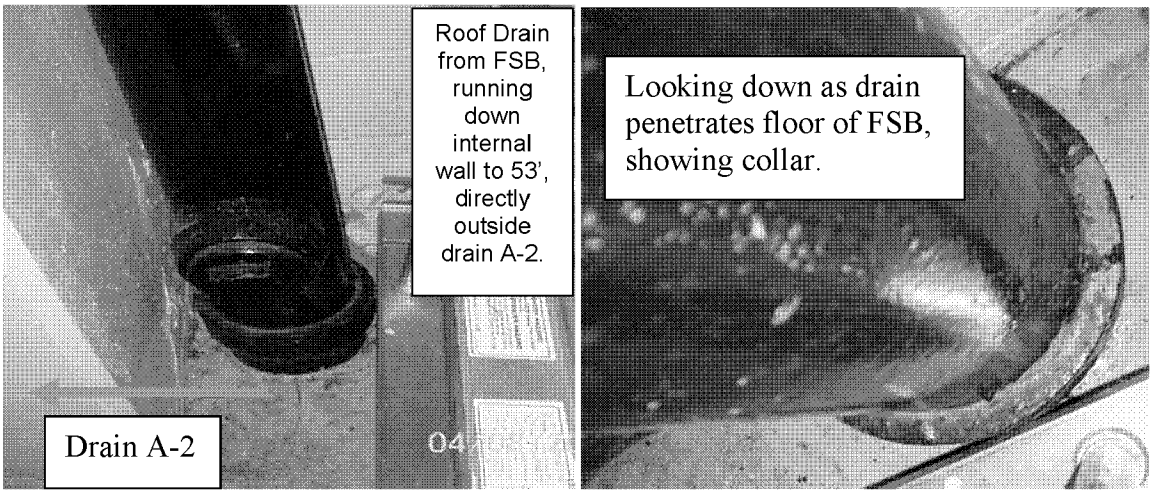


U3 Storm Drain A series, 2009

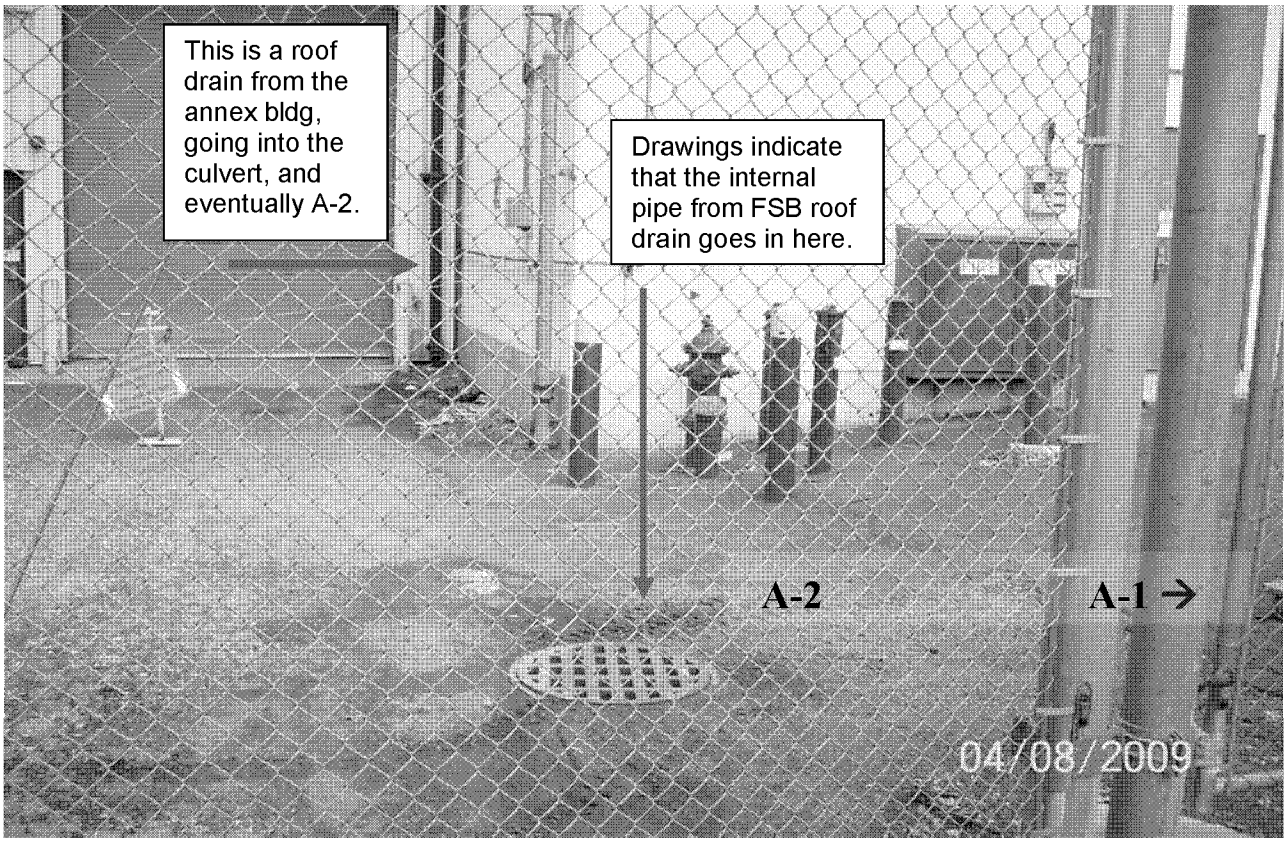


In all cases, H-3 in the “E” series was less than minimum detectable levels.

Two views of the FSB roof drain pipe, inside the FSB, 53' near manhole A-2



Manhole A-2 from outside, looking at Annex and FSB on right.



8. ACTION:

Determine if there is a need for 80-10 eval update for potential site effluent.

EXPECTED RESULTS:

Insufficient H-3 reaches downstream drains to impact site effluents or demand updated 80-10 eval.

ACTUAL RESULTS:

No H-3 has been detected reaching system "E" downstream of system "A". Existing 80-10 guidance for storm drains continuously evaluates potential effluent impact. To date there is no measurable effluent. Samples are periodically scheduled in Chemistry procedures and task matrices per the ongoing 80-10 and Effluent programs. Modified sample periodicity, specifically for periods of high suspected washout or runoff may be a future corrective action, as a product of this investigation, but this action would be for NEI and ANI concerns (pipe/tank integrity) and not necessarily for effluent or 80-10 purposes.

9. ACTION:

Observe the area near the U3 FSB truck bay LWP sump area for standing water. Document any gamma constituents in the water if found, or gamma in the actual drains (A-1 and A-2).

EXPECTED RESULTS:

No standing water in the truck bay, no contamination outside the doorway.

ACTUAL RESULTS:

No water was evident inside or outside the doorway. After some rain, there were some pockets of standing water just south of the A-1 and A-2, however, all water samples were <MDA for gamma emitting isotopes. (No storm drain on site indicated positive gamma emitting isotopes in the water).

10. ACTION:

Obtain a matrix of dirt sample information on 95' hill, around the RWST, to determine if a RWST leak or runoff issue could have contributed to H-3 activity in Storm Drain A series.

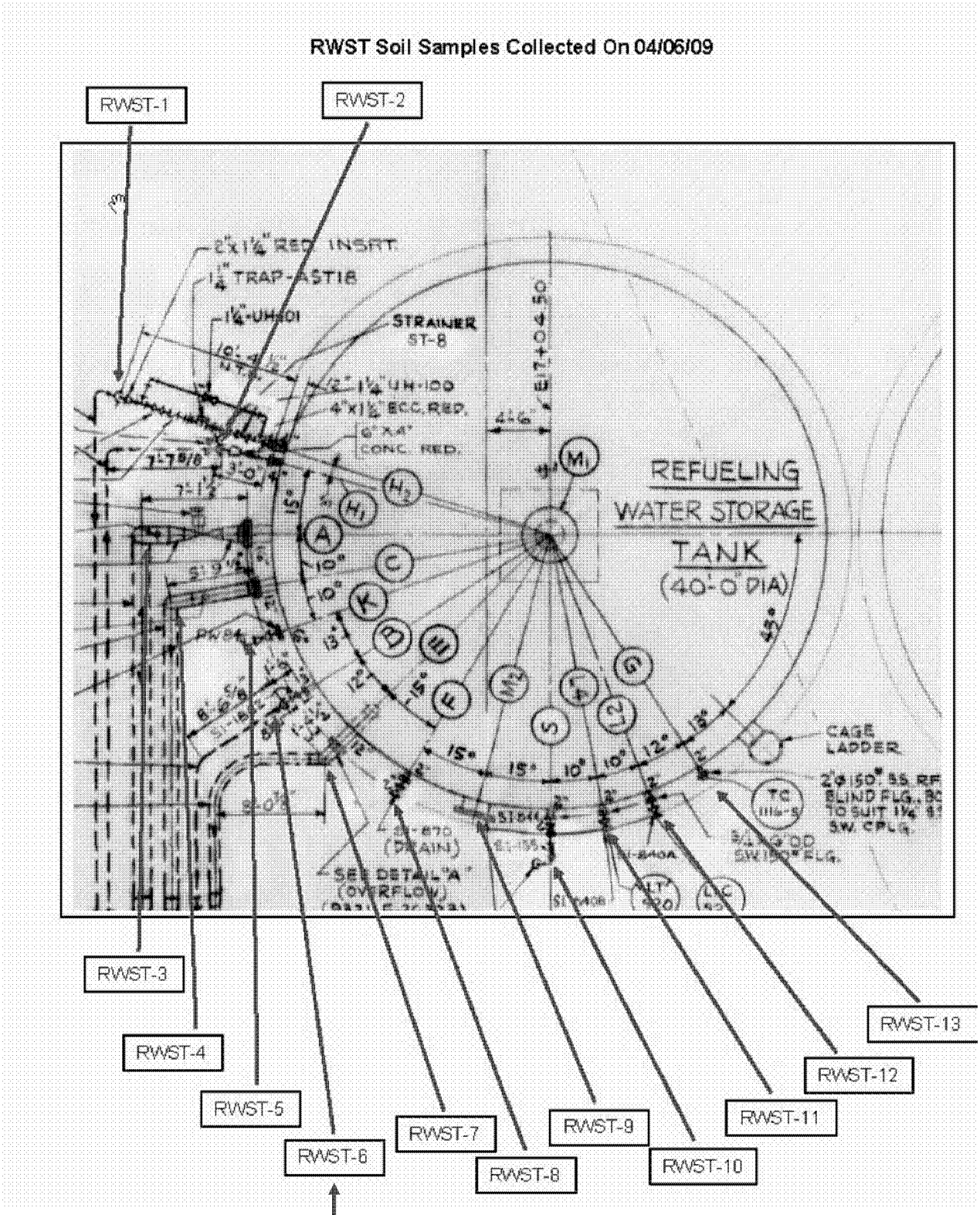
EXPECTED RESULTS:

Some activity is expected in the dirt around the RWST (per 10CFR50.75g). However, Co-58 is not expected. Continued and elevated presence of Co-58 may indicate a spill or leak. See map and dwgs.

ACTUAL RESULTS:

Most dirt samples were <MDA for gamma, or had some trace Cs-137 consistent with our 75g program. One area (sample 6) showed trace Co-58. This area required more detailed investigation. Additional samples of the very specific area were taken, and samples of soil were collected at 6" and 1 foot below the surface. The Co-58 was very small, and mostly on the surface. None was detected at a depth of 12". This contamination was traced back to work performed on the valve directly above the area, a week before. The Co-58 is indicative of approximately 82 mls of water and could not possibly suggest the volume necessary to contribute to the H-3 in the A system storm drains. Therefore, a leak from the RWST atop the hill, down into the drains is NOT considered a likely source of the H-3 found in the storm drains in late March. See the data and maps on the following pages:

RWST Soil Samples Collected On 04/06/09



Two additional samples were taken around point RWST-6, called 6A and 6B. Later, 4 more samples were taken, 6C and 6D at 6" into the soil, and 6E and 6F at 12" depth.

Summary of the RWST soil samples:

Sample ID	uCi/gm	Notes
RWST-1	1.90E-6	Cs-137 only
RWST-2	2.62E-6	Cs-137 only
RWST-3	1.33E-5	Cs-137 only
RWST-4	2.77E-6	Cs-137 only
RWST-5	< mda	***Cs-137 MDA is approx 5E-6 uCi/gm***
RWST-6	1.99E-5	Co-58, verified. More samples collected.
RWST-6A	3.73E-6	Indication of RWST fluid. Be-7, Cr-51, Co-60, as well as Cs-137, in very small amounts. (This sample was in large bottle).
RWST-6B	7.75E-6	Same host of RWST nuclides as 6A.
RWST-6C	5.45E-7	Cs-137 only, 6" below grade.
RWST-6D	5.10E-7	25% Cs-137, 75% Co-58, nothing else, 6" below grade.
RWST-6E	5.90E-8	Cs-137 only, high error, 12" below grade.
RWST-6F	1.68E-7	Cs-137 only, 12 " below grade.
RWST-7	< mda	
RWST-8	< mda	
RWST-9	2.76E-6	Cs-137 only
RWST-10	4.58E-6	
RWST-11	< mda	
RWST-12	< mda	
RWST-13	< mda	

Water in the RWST during the time of this sampling was 2.59E-3 uCi/ml (Fission & Activation Products - Co-58, Co-60, Cr-51, Nb-95, Cs-137, etc) and approximately 0.0853 uCi/ml of Tritium. Local, near-surface activity of E-5 uCi/gm in only one spot, represents only a few drops of this water. A large spill from the RWST adding the H-3 we saw in the "A" series drains is not credible:

> A 12"x"12"x6" cube, with average concentration of 7.8E-6 uCi/gm (taken from all samples in the area), times the density of dirt (120lbs/ft^3), is about .212 uCi. At an RWST concentration of 2.59E-3 uCi/ml, we need only **82** mls to cause this kind of contamination.

At 8.53E-2 uCi/ml, 82 mls of RWST water would be approximately 7 uCi of H-3. With a total of approximately 100 stagnant gallons of water at an average 5E-5 uCi/ml of H-3 in the "A" series drains, we would need approximately 37 gallons of RWST water, or about 1700 times more volume than what the dirt samples would suggest.

11. ACTION:

Document the offsite analytical results of Groundwater and Storm water near the effected A series drains, from April 4, 2009 time frame. Evaluate these results to determine if there is evidence of an unexplained underground contribution of H-3 or other contaminant.

EXPECTED RESULTS:

If data suggests an underground tank or pipe integrity concern, contact Engineering and initiate a new CR. If data is consistent with existing levels of GW activity, then document this event to surface contamination potentially connected with refueling outages and implement corrective actions.

ACTUAL RESULTS: in pCi/L

Sample Point	H-3	Sr-90	Cs-137	Notes
MW-38				
MW-39				
MW-41				
MW-43				
MW-44				
MW-45				
MW-46				
U3-T1				
U3-T2				
SD A-1				
SD A-2				
SD A-4				

INITIAL DATA COLLECTED BY:

NAME	TELEPHONE
Steve Sandike	914-736-8455
Pat Donahue	914-736-8405
Dara Gray	914-736-8414
Bob Lee	914-734-6612
Pat Conroy	914-734-6668

ATTACHMENT 9.2 **TROUBLESHOOTING CONTROL FORM INSTRUCTIONS**

Sheet 1 of 2

I. Determine Troubleshooting Risk Level

Attribute	Description	
1. Initiating Document Number:	Enter number of document describing problem (such as CR or WR/WO).	CR-IP3-2009-01609
2. Affected Components:	List components that will be affected during troubleshooting activities, NA if listed in the WR/WO.	No adverse consequences to any components are anticipated as a result of the planned troubleshooting. Components under review include RWST piping, BUSFCS, monitor tanks, U3 SFP, storm drains, monitoring wells, bldg structures and pipe penetrations.
3. Problem Description:	Fully describe the problem using any additional information obtained from preliminary investigation. (KT or Problem Analysis may be used).	▪ Unexpected levels of H-3 in Storm Drain System A.
4. Special Plant or Equipment Conditions	Describe plant or equipment required for troubleshooting.	▪ Identified during 3R15, but may not be related to outage activities.
5. Potential Cause(s):	From the Initial Investigation list the potential cause(s).	▪ CVCS overflow event (Feb 4) ▪ Pipe, tank or SFP integrity issues in area ▪ Undocumented spill or direct disposition of tritiated water to storm drain.
6. Boundaries	Identify the electrical, mechanical, or system boundaries such as EHC Control Cabinets and include any equipment interface risks.	▪ Between RWST hill, Monitor Tank pad, RAMS, PAB, FSB, in blacktop area around storm drains A-1 thru A-6.
7. Expected Plant Equipment Response:	Identify any expected alarms, instrument indications, automatic actions, etc.	▪ No expected response from plant, unless special tests are suggested (to observe RWST overflow line, for example).
8. Worst Potential Consequence of Activity:	Describe the plant response if the affected components or systems were to be either inadvertently actuated or incapacitated in the course of troubleshooting.	▪ Ongoing H-3 leak from plant system to environment. ▪ Rad effluent issue. ▪ Loss of public trust/confidence from pipe, tank, or SFP integrity issues.

ATTACHMENT 9.3 TROUBLESHOOTING CONTROL FORM

Sheet 1 of 4

PART I - DETERMINE TROUBLESHOOTING RISK LEVEL

1. Initiating Document No. CR-IP3-2009-01609

2. Affected Components: Storm Drain System A, Unit 3

3. Problem Description: Unexpected high H-3 in storm drains.

4. Special Plant/Equipment Conditions: May be related to 3R15

5. Potential Cause(s): Possible pipe/tank integrity problem, spill, or GW issue.

6. Boundaries: Roadway around Storm Drain A series drains

7. Expected Plant Equipment Response: n/a

8. Worst Potential Consequence of Activity: indication of pipe/tank integrity challenge with RWST or SFP

9. Risk Level: 3 Assigned By: Steve Sandike / Chem Staff / 4-4-9
Craft Supervisor Title Date

Approval: Melvin Jenkins 4-4-09
Shift Manager / CRS / FIN SRO Date

Troubleshooting Risk Level is defined as not requiring a Detailed Troubleshooting Plan: NR (✓)

10. On-line/Outage Risk Evaluated. SM Melvin Jenkins or WWM N/A

11. Required Team Members: Chem Steve Sandike Pat Donahue ;
Work Group Name Alternate

Chem Jim Peters D. Wilson Engr Bob Lee ;
Work Group Name Alternate Work Group Name Alternate

PART II - DETAILED TROUBLESHOOTING PLAN NR (_)

12. Troubleshooting Plan Complete: *

Name (Print)	Signature	Extension	Work Group	Date
Steve Sandike	Steve Sandike	8455	Chem	4-16-9

Troubleshooting Plan Verified By:

Name (Print)	Signature	Extension	Work Group	Date
DAN WILSON		582	Chem	4-16-09

13. Approval: N/A
Craft Superintendent Date
(required for Level 1 and 2 activities only)

Approval: N/A
OPS MGR or designee Date
(required for Level 1 and 2 activities only)

Approval: 4/20/09
Shift Manager / CRS / FIN SRO Date

* except for Task #11, expected end of July 2009, will have separate CA.