

Safe Standby Plan for the Tuba City, Arizona, Disposal Site Groundwater Treatment System

April 2015



U.S. DEPARTMENT OF
ENERGY

Legacy
Management

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1.0 Introduction

This plan has been prepared in response to technical direction from the U.S. Department of Energy (DOE) regarding the groundwater treatment system at the Tuba City, Arizona, Disposal Site. DOE directed Stoller Newport News Nuclear, Inc. (SN3), a wholly owned subsidiary of Huntington Ingalls Industries, Inc., to develop a plan to provide guidance for placing the Tuba City Disposal Site treatment plant in a safe standby condition. This was intended to include winterization of the plant and removal of hazardous waste (acid and others) from the site.

2.0 Purpose and Scope

A process to place the groundwater treatment system at the Tuba City site in a safe standby condition is outlined below. This plan only addresses the integrated work control process to place the treatment system in a safe standby condition including identifying and isolating electrical hazards, winterizing the plant, removing sulfuric acid, and developing a disposition plan for hazardous chemicals and radioactive waste that might pose a hazard to employees. Systems exempted from this plan include the control building (including the office space), shop, photovoltaic arrays, evaporation pond, and groundwater extraction system.

3.0 Treatment System

The treatment system is not currently in operation. In its current configuration, the treatment process includes softening, acidification, mechanical evaporation, and condensation. Therefore, the treatment system components addressed in this plan include the feed tank, acid tank, salt tanks, softener building and ion-exchange system, the solar hot water system, and the mechanical evaporator. These treatment system components are identified in the figure presented in Attachment 1.

4.0 Safe Standby Process Description

4.1 Define Scope and Assign Project Team

- [1] Convene meeting with Integrated Project Team (i.e., project manager and subject matter experts in radiological control, safety, site operations, engineering, quality, contracting, and environmental compliance) and define scope, roles, and responsibilities.
- [2] Assemble pertinent project documents (e.g., operations manual, as-built drawings, one-line piping schematic, chemical inventory).
- [3] Conduct initial site walkdown with selected team members (e.g., project manager, radiological control lead, safety lead, Site Operations manager, Engineering lead, Environmental Compliance lead), as appropriate. All work during the walkdown is nonintrusive. Verify the isolation boundary during the initial walkdown. This boundary must be defined in all three dimensions, including overhead, exterior walls, and subsurface, for the facilities shown in the figure in Attachment 1.
- [4] Prepare an integrated project schedule (see Attachment 2) that includes all of the tasks in this plan to ensure that each activity is completed in the logical sequence and relationship.

4.2 Electrical Isolation

- [1] Prepare an electrical isolation index that lists isolations (breakers or disconnects) to process equipment within the isolation boundary. The index should include detailed information on each item, including a description, the source, and the destination.
- [2] In accordance with Legacy Management Support (LMS) work control requirements, define the scope of work required to isolate the electrical. This includes work instructions and photos.
- [3] Ensure electrical power is maintained to building lighting; receptacles; heating, ventilation, and air conditioning; solar thermal control building; and on-demand safety shower water heater.
- [4] The Site Operations manager performs a walkdown of the facility to ensure that all electrical feeds have been placed out of service.

4.3 Piping Isolation

- [1] Prepare a piping isolation index that lists all process piping (including feed, waste, and discharge pipes), gas lines, and nonpotable water pipes within the isolation boundary. The piping index should include detailed information on each item, including a description and the position of isolation valves.
- [2] In accordance with LMS work control requirements, define the scope of work required to isolate the piping. This includes work instructions and photos. Ensure that the piping isolation plan is integrated with the interim treatment plan so that the extraction wells remain operational and the influent from the extraction wells continues to discharge to the evaporation pond.
- [3] The Site Operations manager performs a walkdown of the facility to ensure all piping isolations have been placed out of service.

4.4 Sulfuric Acid

- [1] In accordance with LMS work control requirements, prepare work control documents to remove the sulfuric acid from the storage tank.
- [2] Prepare work control documents to drain de minimis volume and residues remaining in the acid tank and piping.
- [3] Define the scope of work and prepare a purchase requisition for subcontractor Emergency Response Inc. (or equivalent) to remove acid from the tank.
- [4] After the work control documents are approved, remove acid from the tank and piping and neutralize residues as specified in the scope of work.
- [5] The Site Operations manager provides a memorandum to the project manager documenting that all the acid has been removed from the tank and piping in accordance with the scope of work.

4.5 Salt Storage Tank

- [1] In accordance with LMS work control requirements, prepare work control documents to remove the salt from the storage tank.
- [2] Prepare work control documents to solubilize the salt and drain the tank and piping to the evaporation pond.
- [3] After the work control documents are approved, remove salt from the tank and piping as specified in the work control documents.
- [4] The Site Operations manager provides a memorandum to the project manager documenting that all the salt has been removed from the tank and piping in accordance with the work control documents.

4.6 Ion-Exchange Resin

- [1] In accordance with LMS work control requirements, prepare work control documents to remove the resin from the ion-exchange system.
- [2] Prepare work control documents to flush the resin from the ion-exchange tanks and piping to the evaporation pond.
- [3] After the work control documents are approved, remove the resin from the ion-exchange tanks and piping as specified in the work control documents.
- [4] The Site Operations manager provides a memorandum to the project manager documenting that all the salt has been removed from the tank and piping in accordance with the work control documents.

4.7 Hazardous, Radioactive, and Other Wastes

- [1] The Environmental Compliance lead and radiological control lead verify the chemical inventory and the status of other chemicals and radioactive waste during the initial site walkdown. This includes secondary wastes such as spent IX resin regenerant solution and waste stored in the Radioactive Management Area.
- [2] Prepare a chemical and waste disposition plan that includes recycling, reuse, and disposal options (e.g., evaporation pond, Grand Junction, Colorado, Disposal Site, commercial facility) for each waste stream.
- [3] Prepare documents for work control and transportation and purchase requisitions, as appropriate, for disposition of waste streams.
- [4] Implement the chemical and waste disposition plan upon approval.

4.8 Winterization

An example of typical freeze protection procedures to winterize the treatment plant are defined in the Tuba City Maintenance Activity Record (MAR) Number 474, presented in Attachment 3. MAR-474 will be used as a guide to develop the official integrated work control process procedure.

Table 1 in MAR-474 details the actions that are performed as part of the routine freeze protection process. These routine freeze protection activities are currently being implemented at the site and

include inspection and condition/functionality of the heat trace systems, insulation, wiring, GFCI (ground fault circuit interrupter) receptacle operation, and heater functions associated with the salt silos, softener building, nonpotable water supply, solar thermal system, T-2 area, shop, and control building.

Table 2 in MAR-474 details the actions to be completed for an extended standby condition. These actions will be implemented as part of this plan. The activities include draining systems associated with the distillate, feed tank, nonpotable water, salt silos, and the softener building. The solar thermal system will remain operational and be maintained for future use.

The following will be performed:

- [1] Review and revise Table 2 in MAR-474, as necessary, to ensure that all appropriate systems within the isolation boundary (Attachment 1) are drained and winterized.
- [2] Complete actions specified in the revised Table 2 of MAR-474.
- [3] Site Operations manager submits a copy of the completed and approved MAR (or equivalent) that documents the winterization activities are complete to the project manager.

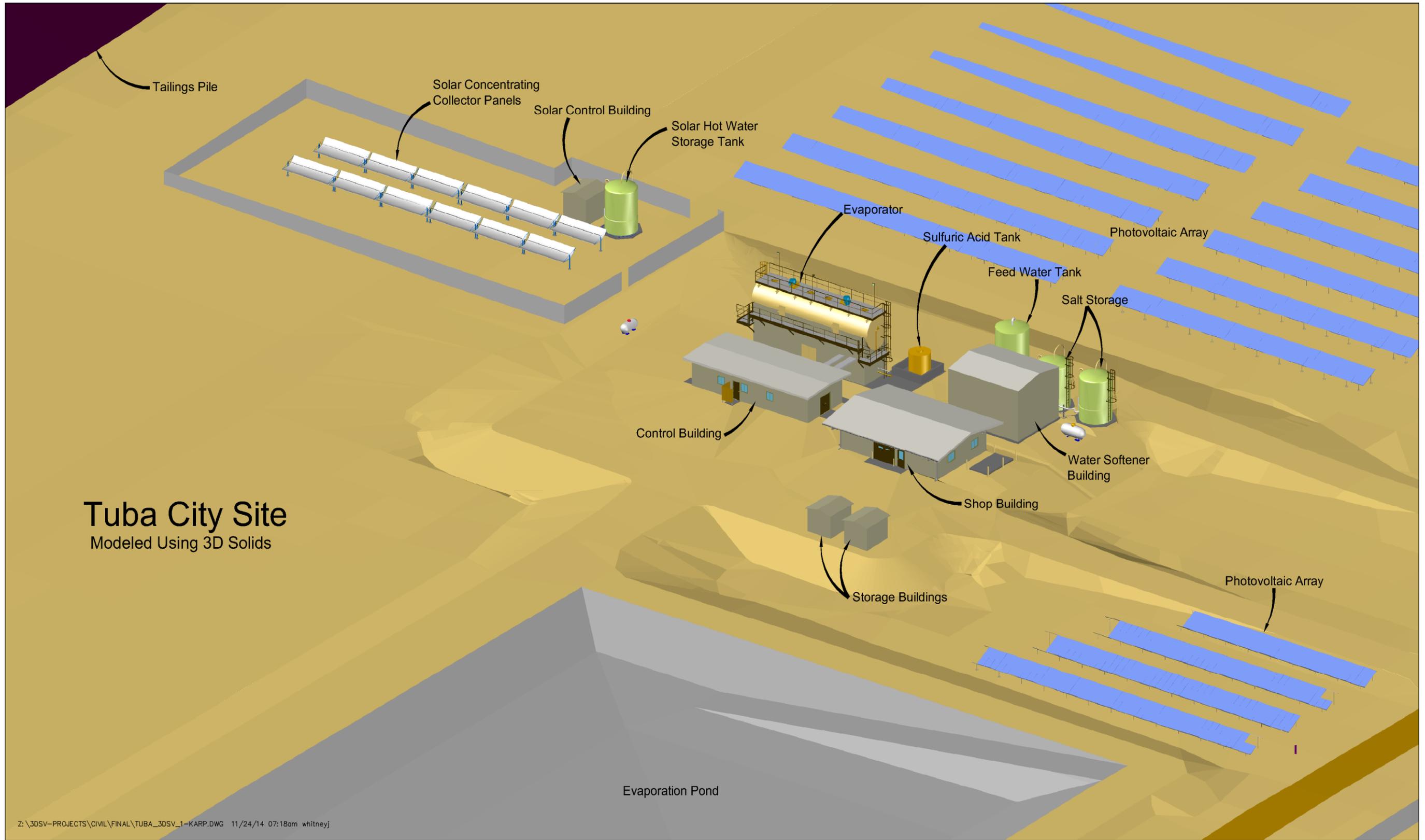
5.0 Final Report

The project manager prepares a final report that documents implementation and completion of safe standby activities.

Attachment 1

Tuba City Site Water Treatment Facilities

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Attachment 2

Safe Standby Planning Schedule (Dynamic)

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ID	Task Name	Duration	Start	Finish	Predecessors	3rd Quarter		1st Quarter		3rd Quarter	
						Jul	Oct	Jan	Apr	Jul	Oct
1	Tuba City Safe Standby	219 days	Mon 11/17/14	Thu 9/17/15							
2	Define SOW (Section 4.1)	22 days	Tue 11/18/14	Wed 12/17/14							
3	IPT Meeting	1 day	Tue 11/18/14	Tue 11/18/14							
4	Finalize Plan	20 days	Wed 11/19/14	Tue 12/16/14	3						
5	Submit Plan to DOE-LM	1 day	Wed 12/17/14	Wed 12/17/14	4						
6	Electrical Isolation (4.2)	35 days	Tue 12/9/14	Mon 1/26/15							
7	LMS Core Team Kick-off Meeting	1 day	Tue 12/9/14	Tue 12/9/14							
8	Prepare Index of SSC Disconnects	24 days	Wed 12/10/14	Mon 1/12/15	7						
9	Perform Site Walkdown With SME's	1 day	Tue 1/13/15	Tue 1/13/15	8						
10	Finalize Work Planning and Perform Electrical Isolation	3 days	Wed 1/14/15	Fri 1/16/15	9						
11	SOM Verification	1 day	Mon 1/19/15	Mon 1/19/15	10						
12	Report to PM	5 days	Tue 1/20/15	Mon 1/26/15	11						
13	Piping Isolation (4.3)	35 days	Tue 12/9/14	Mon 1/26/15							
14	LMS Core Team Kick-off Meeting	1 day	Tue 12/9/14	Tue 12/9/14	7SS						
15	Prepare Piping Index To Isolate System	24 days	Wed 12/10/14	Mon 1/12/15	14						
16	Perform Site Walkdown With SME's	1 day	Tue 1/13/15	Tue 1/13/15	15						
17	Finalize Work Planning and Perform Piping Isolation	3 days	Wed 1/14/15	Fri 1/16/15	16						
18	SOM Verification	1 day	Mon 1/19/15	Mon 1/19/15	17						
19	Report to PM	5 days	Tue 1/20/15	Mon 1/26/15	18						
20	Remove Hazardous Waste/Chemicals (4.8)	76.75 days	Mon 12/15/14	Tue 3/31/15							
21	Finalize Chemical Inventory	7 days	Mon 12/15/14	Tue 12/23/14							
22	Prepare Disposition Plan	10 days	Wed 1/7/15	Tue 1/20/15	21FS+10						
23	Remove Chemicals and Waste	40 days	Wed 1/21/15	Tue 3/17/15	22						
24	Update MSDS Binders	5 days	Wed 1/28/15	Mon 3/23/15	23						
25	SOM Verification	1 day	Mon 3/23/15	Tue 3/24/15	24						

Tuba City Safe Standby Planning Schedule Thu 4/2/15	Task		External Milestone		Manual Summary Rollup	
	Split		Inactive Task		Manual Summary	
	Milestone		Inactive Milestone		Start-only	
	Summary		Inactive Summary		Finish-only	
	Project Summary		Manual Task		Deadline	
	External Tasks		Duration-only		Progress	

ID	Task Name	Duration	Start	Finish	Predecessor	3rd Quarter		1st Quarter		3rd Quarter	
						Jul	Oct	Jan	Apr	Jul	Oct
26	Report to PM	5 days	Tue 3/24/15	Tue 3/31/15	25						
27	Winterization (4.7)	40 days	Mon 11/17/14	Fri 1/9/15							
28	Develop IWCP	5 days	Mon 11/17/14	Fri 11/21/14							
29	Activate Freeze Protective Devices	10 days	Mon 11/24/14	Fri 12/5/14	28						
30	System Draining	20 days	Mon 12/8/14	Fri 1/2/15	29						
31	Closeout Report to PM	5 days	Mon 1/5/15	Fri 1/9/15	30						
32	Remove resin (4.6)	69 days	Tue 12/9/14	Fri 3/13/15							
33	LMS Core Team Kick-off Meeting	1 day	Tue 12/9/14	Tue 12/9/14	7SS						
34	Complete Work Planning	43 days	Wed 12/10/14	Fri 2/6/15	33						
35	Perform Resin Removal	20 days	Mon 2/9/15	Fri 3/6/15	34						
36	Closeout Report to PM	5 days	Mon 3/9/15	Fri 3/13/15	35						
37	Remove salt (4.5)	100 days	Tue 12/9/14	Mon 4/27/15							
38	LMS Core Team Kick-off Meeting	1 day	Tue 12/9/14	Tue 12/9/14	7SS						
39	Complete Work Planning	43 days	Wed 12/10/14	Fri 2/6/15	38						
40	Perform Salt Removal including Vacuuming	40 days	Mon 2/9/15	Fri 4/17/15	39						
41	Verify Silos and Softeners Drained	1 day	Mon 4/20/15	Mon 4/20/15	40						
42	Closeout Report to PM	5 days	Tue 4/21/15	Mon 4/27/15	41						
43	Remove sulfuric acid (4.4)	152 days	Tue 12/9/14	Wed 7/8/15							
44	LMS Core Team Kick-off Meeting	1 day	Tue 12/9/14	Tue 12/9/14	7SS						
45	Develop SOW	82 days	Wed 12/10/14	Thu 4/2/15	44						
46	Procure Acid Removal Subcontractor	30 days	Fri 4/3/15	Thu 5/14/15	45						
47	DOE-LM CO Procurement Review	10 days	Fri 5/15/15	Thu 5/28/15	46						
48	Develop PAE/IWCP Procedure	45 days	Fri 4/3/15	Thu 6/4/15							
49	PAE Approval	15 days	Fri 4/3/15	Thu 4/23/15							
50	NEPA development (includes DOE approval)	15 days	Fri 4/3/15	Thu 4/23/15	45						
51	Finalize Work Planning with Subcontractor	5 days	Fri 5/29/15	Thu 6/4/15	47						

Tuba City Safe Standby Planning Schedule Thu 4/2/15	Task		External Milestone		Manual Summary Rollup	
	Split		Inactive Task		Manual Summary	
	Milestone		Inactive Milestone		Start-only	
	Summary		Inactive Summary		Finish-only	
	Project Summary		Manual Task		Deadline	
	External Tasks		Duration-only		Progress	

ID	Task Name	Duration	Start	Finish	Predecessor	3rd Quarter		1st Quarter		3rd Quarter	
						Jul	Oct	Jan	Apr	Jul	Oct
52	Decision Point - Obtain DOE approval to proceed.	10 days	Fri 6/5/15	Thu 6/18/15	51						
53	Perform Acid Removal	5 days	Fri 6/19/15	Thu 6/25/15	52						
54	Perform Acid System Flush	4 days	Fri 6/26/15	Wed 7/1/15	53						
55	Closeout Report to PM	5 days	Thu 7/2/15	Wed 7/8/15	54						
56	Final DOE Status Report for NRC (5.0)	51 days	Thu 7/9/15	Thu 9/17/15							
57	Draft Final Report	10 days	Thu 7/9/15	Wed 7/22/15	12,19,26						
58	Technical Edit	10 days	Thu 7/23/15	Wed 8/5/15	57						
59	LMS Review	10 days	Thu 8/6/15	Wed 8/19/15	58						
60	Comment Incorporation	5 days	Thu 8/20/15	Wed 8/26/15	59						
61	DOE-LM Review	10 days	Thu 8/27/15	Wed 9/9/15	60						
62	Incorporate DOE-LM Comments	5 days	Thu 9/10/15	Wed 9/16/15	61						
63	Issue Final Report	1 day	Thu 9/17/15	Thu 9/17/15	62						9/17

Tuba City Safe Standby Planning Schedule Thu 4/2/15	Task		External Milestone		Manual Summary Rollup	
	Split		Inactive Task		Manual Summary	
	Milestone		Inactive Milestone		Start-only	
	Summary		Inactive Summary		Finish-only	
	Project Summary		Manual Task		Deadline	
	External Tasks		Duration-only		Progress	

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Attachment 3

MAR-474, Freeze Protection

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Tuba City Maintenance Activity Record (MAR)

This worksheet is implemented by the Tuba City, Arizona, Maintenance and Calibration Program Manual.

Start Date: _____ **Start Time:** _____

End Date: _____ **End Time:** _____

MAR Number: 474

System/Component: Freeze Protection

Description of Maintenance: Annual PM and Extended Shutdown

Hazard Identification and Controls:

1. Is Lockout/Tagout required? Yes No
2. Is there an existing Job Safety Analysis (JSA) that identifies the hazards of this task?
 - Yes *List title of JSA:* Tuba City Routine Operations and General Maintenance
Tuba City Process Sampling
 - No *Consult site operations manager for guidance on developing hazard controls.*
3. Is a Safe Work Permit, Hot Work Permit, or Confined Space Entry Permit required for this activity?
 - Yes *List title of permit:* _____
 - No

Maintenance Procedures/Steps: CAUTION – PPE required for all process water systems (brine, feed, distillate) in accordance with the Process Sampling JSA.

1. Verify completion of a PA/E or equivalent per the Site Operations Manager. Environmental and Health and Safety require concurrence for draining tanks (eg. infiltration tank, salt tanks, solar tank) and dispositioning waste (eg. softener resin).
2. Perform LOTO per associated SEP to de-energize the feed pump, isolate the feed pump suction, de-energize the acid pump, and isolate the acid tank outlet.
CAUTION – Equipment repair is not authorized per this MAR.
3. Perform the actions in Table 1 – 1e. Minimum inspection criteria include condition/functionality of heat trace systems, insulation, wiring, GFI receptacle operation (latest GFI monthly inspection), heater function, etc. These substeps may be performed concurrently. Record final system configuration.
4. Verify WTP shutdown and drained (evaporator, boiler, and distillate tank) in accordance with the Tuba City Operating Manual, Section 2.2.
4.1. Note: All valves shall remain in their normal position unless specifically addressed in Table 2.
5. Perform the following actions in Table 2 at the discretion of the Site Operations Manager. This step may be performed concurrently with step 3 once step 4 has been completed. Record final system configuration.

Table 1 Routine Freeze Protection - Salt Silos & Softener Building

Description	Energized		Initial, Date, and Final System Configuration
	YES	NO	
East silo tank level indicator heat trace.			
Feed Tk Level heat trace lamp energized			
Feed Tk Level indicator heat trace energized			
Soft Building Heater ON			

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Tuba City Maintenance Activity Record (MAR)

Table 1a Routine Freeze Protection - Non-Potable/Fresh Water (Pumphouse)

Description	Energized		Initial, Date, and Final System Configuration
	YES	NO	
Pump house heat trace		NA	Required regardless of system status.
Pump House heater/lamp		NA	Required regardless of system status.

Table 1b Routine Freeze Protection – Fresh Water (Skid and Yard)

Description	Energized		Initial, Date, and Final System Configuration
	YES	NO	
Outside Skid West		NA	Required regardless of system status.
Outside Skid North		NA	Required regardless of system status.
Outside Skid East		NA	Required regardless of system status.
Inside Skid Eye Wash		NA	Required regardless of system status.
Inside Skid West		NA	Required regardless of system status.
Outside Evap. topside		NA	Required regardless of system status.
Outside Skid East faucet		NA	Required regardless of system status.

Table 1c Routine Freeze Protection – Solar Thermal

Description	Energized		Initial, Date, and Final System Configuration
	YES	NO	
T-400 outlet			
Solar building East			
Solar Shed Heater Bkr			

Table 1d Routine Freeze Protection – T-2

Description	Energized		Initial, Date, and Final System Configuration
	YES	NO	
T-2 level transmitter/inlet piping Heat Trace			

Table 1e Routine Freeze Protection – Lab, Shop, and Control Building

Description	Energized		Initial, Date, and Final System Configuration
	YES	NO	
Heaters		NA	Required regardless of system status.

Tuba City Maintenance Activity Record (MAR)

Table 2 - Extended Shutdown - Distillate

Description	Action	Initial Complete	Final Configuration
Distillate pH probe	Remove and verify dry.		Weekly calibration may be secured.
V-170 (Distillate Cooler Dist. Inlet)	Route hose to Evap pond drain. Open and Drain.		
V-176 (Distillate Cooler Dist. Outlet)	Route hose to Evap pond drain. Open and Drain.		
V-181 (Dist pH inlet)	OPEN & DRAIN		
V-182 (Dist pH throttle)	OPEN & DRAIN		
V-183 (Dist pH outlet)	OPEN & DRAIN		
V-184 (Skid East)	Route hose to Evap pond drain. Open and Drain.		
V-192A (Drain north wall across from recirc)	OPEN & DRAIN		
V-192B (Drain between dist cooler & north skid wall)	OPEN & DRAIN		
V-195A (Drain north wall across from recirc)	OPEN & DRAIN		
V-195B (Drain between dist cooler & north skid wall)	OPEN & DRAIN		
V-285 (steam line drain dist tk)	OPEN & DRAIN		
V-290A (Dist sample valve @ pump)	OPEN & DRAIN		
V-290B (Dist sample valve @ pump)	OPEN & DRAIN		
V-291A (Dist sample valve @ pump)	OPEN & DRAIN		
V-291B (Dist sample valve @ pump)	OPEN & DRAIN		
V-292A (Dist sample valve @ pump)	OPEN & DRAIN		
V-292B (Dist sample valve @ pump)	OPEN & DRAIN		
V-293A (Dist sample valve @ pump)	OPEN & DRAIN		
V-293B (Dist sample valve @ pump)	OPEN & DRAIN		
V-294A (Dist sample NE of boiler)	OPEN & DRAIN		
V-294B (Dist sample NE of boiler)	OPEN & DRAIN		
V-295A (Dist sample NE of boiler)	OPEN & DRAIN		
V-295B (dist sample between dist cooler and recirc)	OPEN & DRAIN		
V-296A (Dist sample NE of boiler)	OPEN & DRAIN		
V-297A (Dist sample NE of boiler)	OPEN & DRAIN		
V-507 (acid yard below grade)	Open and drain T-2 (infiltration tank) and associated inlet piping via V-288 and V-286 in skid (ensure hoses routed to evaporator pond drain).		
V-511 (Dist pump drain)	OPEN & DRAIN		

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Tuba City Maintenance Activity Record (MAR)

Table 2a - Extended Shutdown - Feed (outside of Softener Building)

Description	Action	Initial Complete	Final Configuration
Acid/Feed pH probe	Remove and verify dry.		Weekly calibration may be secured.
V-104 (Dist. Cooler Feed inlet)	Route hose to Evap pond drain. Open and Drain.		
V-105 (Dist. Cooler Feed outlet)	Route hose to Evap pond drain. Open and Drain.		
V-111 (Skid East)	Route hose to Evap pond drain. Open and Drain.		
V-187A (Skid East)	Route hose to Evap pond drain. Open and Drain.		
V-503 (Feed pH sample)	OPEN & DRAIN		
V-508 (feed flow meter inlet)	OPEN & DRAIN		
V-509 (II-408 feed outlet)	OPEN & DRAIN		
V-510 (H-409 feed outlet)	OPEN & DRAIN		
V-515 (acid tk yard location)	Route hose to Evap pond drain. Open and Drain.		

Table 2b - Extended Shutdown - Brine

Description	Action	Initial Complete	Final Configuration
V-140 (Brine discharge drain)	OPEN & DRAIN		
V-144 (Brine Sample)	Open and Drain		
V-147 (Brine pump inlet)	Route hose to Evap pond drain. Open and Drain.		

Table 2c - Extended Shutdown - Solar Thermal

Description	Action	Initial Complete	Final Configuration
V-472A (H-408 solar outlet)	OPEN & DRAIN		
V-472B (H-409 solar outlet)	OPEN & DRAIN		

Table 2d - Extended Shutdown - Vacuum

Description	Action	Initial Complete	Final Configuration
V-250 (vac pump discharge drain)	OPEN & DRAIN		

Tuba City Maintenance Activity Record (MAR)

Table 2e - Extended Shutdown - Recirc

Description	Action	Initial Complete	Final Configuration
V-131A (Recirc A to Brine)	OPEN & DRAIN		
V-131B (Recirc B to Brine)	OPEN & DRAIN		
V-137A (Recirc drain)	OPEN & DRAIN		
V-137B (Recirc drain)	OPEN & DRAIN		

Table 2f - Extended Shutdown - Non-Potable/Fresh Water (Pump house)

Description	Action	Initial Complete	Final Configuration
Chlorine pump de-energized.	(Unplug) and Drain System		NA if the facility is manned.
Non-Potable (Fresh) Water pump #948 breaker	OPEN (local)		NA if the facility is manned.
P-502 Non-Pot Water Booster pump bkr	OPEN (local)		NA if the facility is manned.
V-523 & V-528	OPEN & Drain system		NA if the facility is manned.

Table 2g - Extended Shutdown - Fresh Water (Skid and Yard)

Description	Action	Initial Complete	Final Configuration
HTR-500 bkr	OPEN		NA if the facility is manned.
V-287, V- 288, V-286	Route hose from V-288 & V-286 Spigot to pond drain. OPEN and drain.		NA if the facility is manned.
V-507, E-507 strainer. Note: V-507 is redundant – dist. to freshwater system cross connect in the acid tank yard area (below grade).	OPEN and Drain		NA if the facility is manned.
Yard Hydrant	Route hose to pond drain and OPEN		NA if the facility is manned.

Table 2h - Extended Shutdown - Salt Silos & Softener Building

Description	Action	Initial Complete	Final Configuration
Hardness Monitor	Secure & Drain		
V-300 & V-302A	Route hose from each to pond drain and OPEN to Drain Silos.		Removing the salt content will require dilution and flushing per separate MAR.
V-351 – T-350	Route hose to Evap Pond; OPEN and Drain T-350.		
V-417	OPEN and Drain T-380		
T-361 drain isolation (please verify)	OPEN and DRAIN at Site Ops Mgr discretion.		Removal of resin requires a separate MAR.
T-362 drain isolation (please verify)	OPEN and DRAIN at Site Ops Mgr discretion.		Removal of resin requires a separate MAR.

Tuba City Maintenance Activity Record (MAR)

Post Maintenance Testing Procedures/Steps: None

Comments/Feedback:

Maintenance Performed By:		
_____	_____	_____
<i>Operator (print name)</i>	<i>Signature</i>	<i>Date</i>
Reviewed and Approved By:		
_____	_____	_____
<i>Site Operations Manager (print name)</i>	<i>Signature</i>	<i>Date</i>

Example Only