

FLORIDA POWER & LIGHT COMPANY
ST. LUCIE PLANT
OPERATING PROCEDURE NO. 0520023
REVISION 0

1.0 Title:

Dewatering Radioactive Bead Resins

2.0 Review and Approval:

Reviewed by Facility Review Group _____ March 1, 1983

Approved by _____ Plant Manager _____ 1983

Revision _____ Reviewed by F R G _____ March 4 - 1983

Approved by C. M. Wething Plant Manager 3-8-1983

3.0 Purpose:

This procedure provides instructions for the dewatering of radioactive bead resins from St. Lucie Unit No. 1 and St. Lucie Unit No. 2 for disposal at a low level radioactive waste disposal facility.

4.0 Limits and Precautions:

4.1 Full scale testing must be provided for all containers used to dispose of dewatered radioactive bead resins in accordance with Administrative Procedure No. 0520025.

4.2 Disposal of dewatered radioactive bead resin is limited to the following containers:

4.2.1 CNSI Conical Bottom EnviroSAFE™ High Integrity Container type PL6-80CR.

4.2.2 CNSI Conical Bottom EnviroSAFE™ High Integrity Container type PL14-195CR.

4.3 The maximum allowable free standing liquid allowed in radioactive waste is 1%.

4.4 The following limits apply for disposal of radioactive bead resin at the Barnwell Waste Management Facility:

4.4.1 Dewatered radioactive bead resins may be disposed of in High Integrity Containers pursuant to the Barnwell Site Criteria. Free standing liquids must be less than 1% of the waste volume.

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4.0 Limits and Precautions: (continued)

4.4 (continued)

- 4.4.2 Dewatered radioactive bead resin may be disposed of in other containers pursuant to the Barnwell Site Criteria. Free standing liquids must be less than 0.5% of the waste volume.
- 4.5 With dewatering not meeting disposal site, shipping, and/or transportation requirements, suspend shipment of the inadequately dewatered bead resin and correct the process control program, the applicable procedure(s), and/or the dewatering system as necessary to prevent recurrence.
- 4.6 With dewatering not performed in accordance with the PCP: (1) if the dewatered radioactive bead resin has not already been shipped for disposal, verify each container to ensure that it meets burial ground, shipping and transportation requirements, and/or (2) take appropriate administrative action to prevent recurrence.

5.0 Related System Status:

- 5.1 Instrument Air System available
- 5.2 Positive displacement, air operated, diaphragm pump such as a Warren-Rupp Sandpiper with either 1 1/2" or 2" diameter inlet/outlet connections available.

6.0 References:

- 6.1 Dewatering Procedure for CNSI Conical-Bottom EnviroSAFE™ High Integrity Containers (containing bead-type ion exchange resin) 1% free standing water - FO-OP-003.
- 6.2 Lab Record Sheet for Conical Bottom Demineralizers and Resin Liners, Project No. 11038.
- 6.3 Test Procedure for Dewatering Conical Bottom Demineralizers and Resin Liners, Project No. 11038.

7.0 Records and Notifications:

CNSI High Integrity Container Dewatering Record to < 1% F.S.W.

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8.0 Instructions:

- 8.1 Obtain a positive displacement, air-operated, diaphragm pump such as a Warren-Rupp Sandpiper with either 1 1/2" or 2" diameter inlet/outlet connections.
- 8.2 Connect suction of pump to the proper dewatering connection on the resin liner fill head with a pressure tested hose of at least 1 1/2" in diameter.
- 8.3 Blow out service airline(s) to clear any trapped liquids and then connect to the dewatering pump.
- 8.4 Connect discharge line to the pump. Filter the discharge if required by Chemistry Department. Be aware of potential high exposure rates from filters during dewatering.
- 8.5 Route the discharge of pump to approved drain line; either a floor drain or other radwaste system as approved by Chemistry.
- 8.6 Perform a functional test of pumps and hose(s) before actual resin bead transfer. Tighten any leaks. Bag all connections on suction and discharge hoses.
- 8.7 Transfer resin to the disposal container.
- 8.8 Start the dewatering pump as soon as the resin slurry starts to collect in the liner. Run pump at a speed of two (2) strokes per second or faster, avoiding pump cavitation or stalling.
- 8.9 Continue to dewater throughout transfer of slurry and flushing operations unless requested to stop by the Radwaste Supervisor or the Operations Supervisor.
- 8.10 When all transfer and flushing operations are complete, close the fill valves on the fill head and inside the Drumming Room. Record the time dewatering started on the attached form.
- 8.11 Continue to run the dewatering pump for a minimum of eight (8) hours. Before securing the pump, lift the suction hose so as to remove any pockets of water trapped in the hose. Stop the pump and record the time on the attached form.
- 8.12 Let the vessel stand for a minimum of 16 hours.
- 8.13 Start the dewatering pump and run a \geq 2 strokes per second and run for at least eight (8) hours. Remove water trapped in suction hose as before and then secure the pump. Record times on form.
- 8.14 Let the vessel stand for a minimum of 16 hours.
- 8.15 Obtain a container such as a bucket or drum to catch discharge of pump.

CAUTION: Water will be HIGHLY RADIOACTIVE.

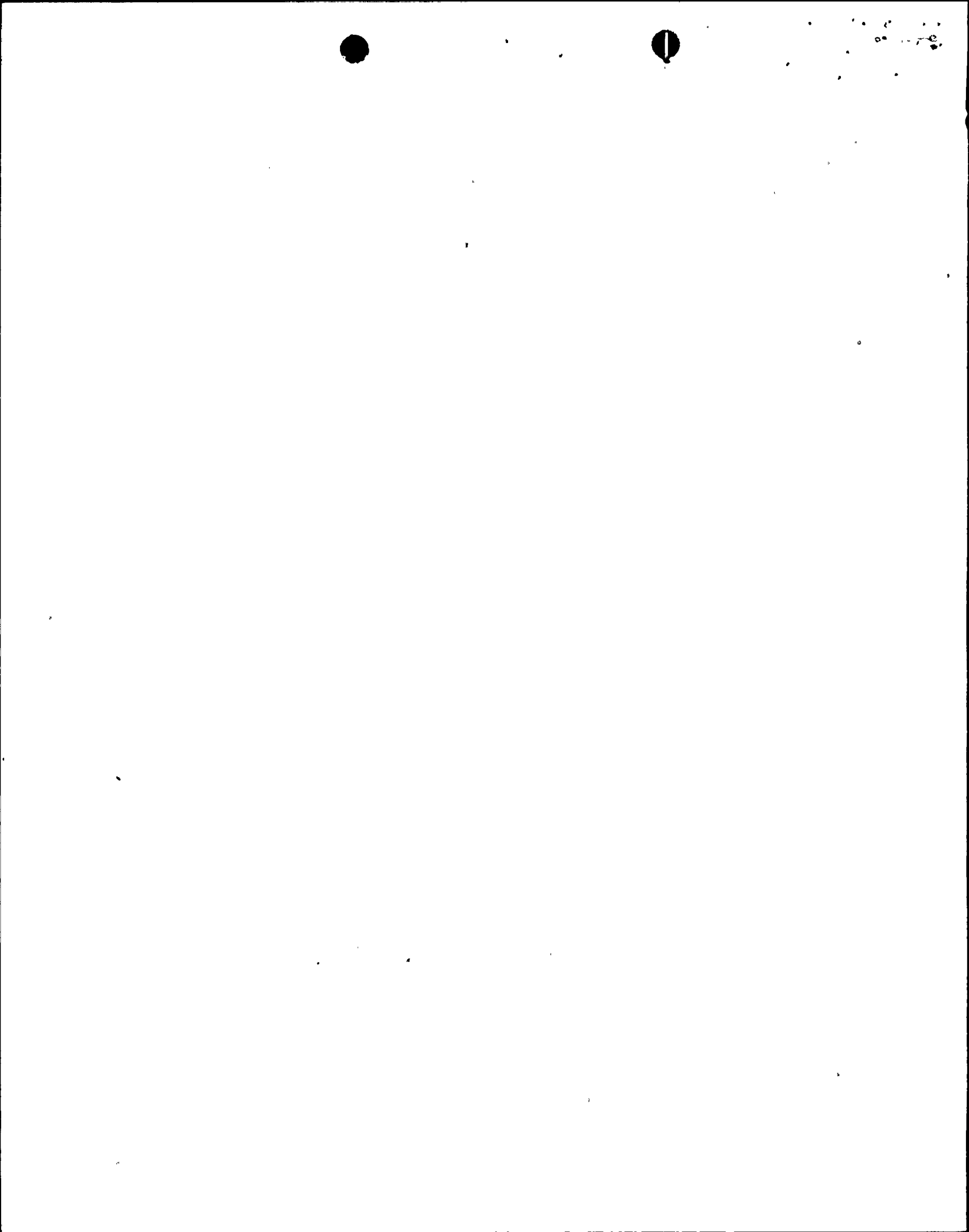
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8.0 Instructions: (continued)

- 8.16 Start the dewatering pump and run for eight (8) hours minimum. Measure the volume of water collected during the third cycle being sure to remove any water standing in the suction hose as before.
- 8.17 If the volume of water collected is greater than 2000 ml, repeat the dewatering cycle of 16 hours standing and eight hours pumping until less than 2000 ml of water is collected.
- 8.18 If the volume of water is less than 2000 ml, dewatering is complete. Record volume of water collected along with start and stop times of dewatering on form.

NOTE: The dewatering record (i.e. CNSI High Integrity Container Dewatering Record to < 1% F.S.W.) must be completed and approved by the Radwaste Supervisor. The completed form must also be included in the shipping papers.

- 8.19 Disconnect fill head from liner and ready liner and cask for shipment.



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C.N.S.I. HIGH-INTEGRITY CONTAINER
DEWATERING RECORD - TO <1% F.S.W.

Shipment Number _____

Allocation Number _____

Liner Designation _____

Liner Serial Number _____

	DATE	TIME	BY
A. Start Dewatering Pump	/ /	:	
Stop Dewatering Pump	/ /	:	
Total Pumping Time _____ *			
B. Let vessel stand for \geq 16 hours.			
C. Start Dewatering Pump	/ /	:	
Stop Dewatering Pump	/ /	:	
Total Pumping Time _____ *			
D. Let vessel stand for \geq 16 hours.			
E. Start Dewatering Pump	/ /	:	
Stop Dewatering Pump	/ /	:	
Total Pumping Time _____ *			
F. Volume of water collected _____ mls			
G. Repeat cycle necessary? <input type="checkbox"/> Yes <input type="checkbox"/> No			
H. Record of repeat cycles if necessary _____			

Comments _____

* Must be \geq 8 hours

Approved by Radwaste Supervisor

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