Citizens Exhibits 22

RAS 14335

05/16/06 09:48:43

GPU Nuclear Technical Data Report	TDR No. 964	Revision No. 0
	Budget Activity No. 402873	Page 1 of 6
Project: DRYWELL SAND BED DRAIN LEAKAGE	Department/Section E&D Mech. Components	
	Release Date ________	Revision Date ________

Document Title: CLEARING OF THE OYSTER CREEK DRYWELL SAND BED DRAINS

Originator Signature	Date	Approval(s) Signature	Date
[signature]	2/15/89	[signature]	3/3/89

Does this TDR include recommendation(s)? [X] Yes [ ] No If yes, TFWR/TR# AT-5691, AT-5692 Mech

*	Distribution
*	G.R. Capodanno
*	M.O. Sanford
*	D.K. Croneberger
*	A.H. Rone - OC
*	R.E. Brown - OC
*	E.F. O'Connor
*	J.D. Abramovici
*	D.G. Slear
	F.P. Barbieri
*	R.L. Lorenzo
	R.F. Smith - OC
*	E.J. Scheyder-OC
	A.R. Aiken - OC

Abstract:

Statement of Problem
On October 26, 1988 during the drywell cathodic protection core bore installation (B/A 402873) standing water was found in the drywell sand bed cushion. Inspection of the sand bed drains disclosed that a small drip was present at four of the five bay drains (3, 11, 15, & 19). Since dripping is not considered representative of drainage, it was considered prudent to "clear the sand bed drains".

Summary
The sand bed drains and sand beds were cleared and agitated. This resulted in collection of 514 gallon of water over a span of 4 weeks (11/16/88 to 12/16/88).

Although each of sand beds have been agitated, water is still dripping from the drain pipes. (Feb. 2, 1989)

(For Additional Space Use Side 2)

* Abstract Only

OCLR00028912

Template=SECY-028

SECY-02

Abstract Continuation TDR No. 897 Revision No. 0

Conclusion

Sand bed drains from elbow to sand bed were agglomerated thus preventing water from draining and have been cleared.

Recommendation

1. Install a catch basin under each sand bed drain and route poly tubing to individual 5 gallon poly containers at respective bays at the perimeter of the torus. This container should be monitored and reported to Technical Functions on a weekly basis by plant operations. This is being accomplished by Reference 1.

2. Place sand bed drains on planned maintenance schedule to be accessed and agitated at the next planned outage(13R). TR AT-5691

3. Review recommendations made in TDR 831 and assess if further drying of the sand can be effectively accomplished. TR AT-5692

TABLE OF CONTENTS

1.0 INTRODUCTION

On Oct 26, 1988 during the cathodic protection core bore operation (B/A 402873) it was noted that hole 2 in bay 11 was filled with standing water. This water when tested by O.C. chemistry was found not to be core bore water used during the drilling operation but rather it had characteristics of "old" fuel pool water.

Since the reactor cavity had not been filled with fuel pool water for the "upcoming refueling" it was postulated that this entrapped water could be "old" fuel pool water.

It was estimated that a quantity of 400 to 550 gallons was present in the sand bed region.

An inspection of the five(5) sand bed drains disclosed that only a small drip was present at four of the drains(3, 11, 15, & 19).

Since the level of this water in the core hole of bay 11 did not decrease and the dripping was not considered representative of drainage, it was considered prudent to "clear the sand drains".

Consequently, a work order was issued to "clear the sand bed drains".

1.1 Background

There are drainage channels in the bottom of the 35 foot dia sand bed that slope toward five 4" Sch 40 sand filled drain lines. The five drain lines are located beneath every other downcomer nozzle in bays 3, 7, 11, 15 and 19. Each of the drain line runs vertically (approximately 15 inches) from the sand area to a 90° elbow and down a slopped pipe (1" per foot) for approximately 9 feet 6 inches through the concrete foundation before penetrating into the torus room.

Each pipe drain has a 100 mesh S.S. screen to retain the sand in the line.

Removing the screen and examining each of the pipes revealed that only one drain pipe(bay 11) had sand in the pipe. The remainder of the drain pipes were partially empty of sand.

2.0 METHODS

Scaffolding had to be built in each bay to access the drain pipes. In addition each of the five 4" sch 40 drain pipes were cut back to gain access to the end of the pipe.

As a precaution to a sudden discharge of water or sand, a specially designed 4" test plug with a 2" threaded connection was installed in the end of each of the 5 pipes. To this connection a 2" tee was assembled so that a machine driven 3/4" dia snake (Attachment 1) could be inserted into the pipe. A 1/2" ball valve along with a poly catch funnel was installed under this assembly to collect any water resulting from the cleared sand bed. Both the 2" ball valve and catch basin were manifolded together to a 1/2" poly tubing which was then routed under the torus to a 55 gal drum. This arrangement was made to each of the five sand bed drains.

The machine driven 3/4" reinforced snake was fitted with various cutting accessories (Attachment 1) to clear the sand packed drains. Specifically a spear head was used to open the way followed by progressively changing to larger cutters (2-1/2" dia).

A wet vacuum was also used to assist in the clearing and collecting of sand and water samples.

3.0 RESULTS

Although problems kept cropping up to delay the goal of clearing the water from the sand beds, the clearing of each of the drains was finally completed on December 9, 1988.

The total water collected as of Dec. 16, 1988 amounted to 514 gallons. Graph (Attachment 2) shows the total water collected and a bar chart (Attachment 3) shows the progression of clearing of each drain.

Bay 11 was chosen as the first drain to clear because of the water found in core hole 2 of the drywell cathodic protection program (B/A 402873).

Using a hand held drain cleaner with 1/2" cable and various cutting tools proved to be unsuccessful after many configuration changes.

Consequently, it was decided to move to bay 15. Upon removing the screen at the end of the pipe a second screen(original screen) started to discharge water at a very fast rate. In the course of seven days 192 gallons of water was collected.

Since bay 15 was draining on its own, a decision was made to proceed to bay 3. Using a 1/2" dull drill point on the hand held "Super Vee" drain cleaner (Attachment 1) a break was made in the hard sand packed area beyond the 90° elbow. Water poured out of this drain at a very fast rate. In the course of two days 82 gallons were collected.

Because of the difficulty encountered using the hand held drain cleaner a larger capacity, heavy duty machine was obtained (Attachment 1).

Setting up the heavy duty machine in bay 7 resulted in accessing the sand bed and agitating the sand to a distance of six feet beyond the 90° elbow. Water came out of this drain in a small stream.

The amount collected in four days amounted to 28 gallons. On December 14, 1988 the total collected amounted to 42.3 gallons. This drain had never been recorded as "dripping".

The drain pipe in bay 19 was then accessed and the machine driven 3/4" cable and 2-1/2" dia cutter was moved in and out to agitate the sand bed six feet beyond the 90° elbow. No excessive water appeared from this exercize however the cable and cutter showed evidence of damp sand. A total of 2.6 gallons was collected as of December 14, 1988.

The drain pipe in bay 11 was then accessed using a small 1/2" spade type cutter. However, enlarging the hole proved to be difficult and time consuming until a specifically designed auger was used. Specifically, the sand was packed tightly and gaining access to the sand bed was slow and tedious. Finally after much persistence and "elbow grease" the sand bed was accessed. The sand bed was accessed 28" beyond the 90° elbow and the 3/4" cable with a 2-1/2'cutter was moved in and out of the sand bed to agitate the sand bed. It was decided to "hold up" completely accessing the sand bed because the cathodic protection anodes were already installed in this bay. A small amount of water was found in this bay as evidensed by the damp sand on the cable and cutter.

Although bay 15 and bay 3 were draining it was decided to go into the drains and subsequent sand beds to agitate the sand beds. This was accomplished in both bays and the 3/4" cable with associated 2-1/2" dia end piece was moved in and out of the beds at a distance of six feet from the 90° elbow.

A graphic representation of access to each of the sand bed drains is shown by Attachment 4.

4.0 CONCLUSIONS

It was difficult to access the drywell sand beds from each of the sand bed drains. However, it was finally accomplished and a total of 514 gallons of water was collected as of December 16, 1988 (Attachment 2). The water had all but stopped from each of the drains.

Water samples were collected from each bay drain and analysis proved to be inconclusive (Attachment 5 and Reference 2).

Sand samples were collected from several bays and analyzed as to why the sand was impervious to draining of water from the sand bed (Attachment 6 and Reference 3 and 4).

5.0 RECOMMENDATION

1. Install a catch basin under each sand bed drain and route poly tubing to individual 5 gallon poly containers at respective bays at the perimeter of the torus. This container should be monitored and reported to Tech Functions on a weekly basis by plant operations. This is being accomplished by Reference 1.

2. Place sand bed drains on planned maintenance schedule to be accessed and agitated at the next planned outage(13R).

3. Review recommendations made in TDR 831 and assess if further drying of the sand can be effectively accomplished.

6.0 REFERENCES

Reference 1 Memo 5310-89-001 "Surveillance of the Oyster Creek Drywell Sand Bed Drains in the Torus Room" dated 1/4/89 from J.A. Marting to K. Mulligan.

Reference 2 Memo 2210-89-020 "Drywell Leak off Samples" dated 1/16/89 from W. dunphy to G. R. Taylor.

Reference 3 Memo 5390-89-0002 "Drywell Sand and Water Analysis" dated 1/3/89 from P. R. Walton to G.R. Taylor.

Reference 4 Report 5393-89-0116 "Drywell Sand and Water Analysis" Oyster Creek from M. J. Chelius to G.R. Taylor.

The following plan is in place for inspecting for leakage around the Drywell:

Prior to Refueling Outage

- A camera inspection is performed to ensure the cavity trough drain line is free of any debris that could cause the trough to overflow and run down the drywell shell. (PM 18703M)

During Refueling Outage

- Strippable Coating is applied to the Reactor Cavity and Equipment Pool to minimize leakage.

- A camera inspection is performed while the cavity is flooded to ensure debris has not clogged the drain. (PM 18703M)

- After flood-up, inspections commence to determine if leakage is occurring, and to quantify the amount of leakage. The frequency of inspections is a minimum of once per day. The inspections will continue while the cavity is flooded. After drain-down, the inspections will continue until leakage has stopped. Inspection locations include poly bottles in the Torus room, concrete around vent pipes as viewed from the top of the Torus, Cavity and equipment pool drains, and electrical penetrations on 23' & 51' elevations. (PM 18704M)

During Run Cycle

- Inspections are performed on a quarterly basis to check for water in the Torus room poly bottles and leakage from the cavity trough drain. (PM 18705M)

Note: Water was found in 3 poly bottles in March 2006. This water was believed to be from past refueling outages. A sample of the water was taken in April 2006 and was found to have no activity. The bottles have been inspected twice since March (The latest inspection was May 26, 2006), with no water found.