Core Shroud
Reinspection Plan

Unit 1
B111R1 Outage

October 1996

Recommended by: _____ Date: 6/28/96

Approved by: _____ Date: 6-30-96

Unit 1 B111R1 Outage
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INSPECTION SUMMARY

The scope of reinspection for the Unit 1 core shroud is based on the results of previous inspections performed on both Unit 1 and Unit 2, guidance on shroud inspections contained in NRC Generic Letter 94-03, BWRVIP documents *"Guidelines for Reinspection of BWR Core Shrouds"* and *"BWR Core Shroud Inspection and Evaluation Guidelines"* and continuing developments in the industry.

The inspections of the Unit 1 core shroud performed during the B109R1 outage (1993) met the requirements of NRC Generic Letter 94-03 of inspecting accessible areas of the shroud circumferential welds. In addition, vertical welds and several attachments welds, and other parts of the core support structure were examined during these inspections. Specific areas on several circumferential welds were benchmarked, so that they could be re-examined to determine the extent of crack growth. A reinspection of the shroud was performed during the B110R1 outage (1995) focusing on three objectives: (1) re-examination of selected areas to determine crack growth, (2) examination of previously inaccessible areas by use of specialized tooling and (3) examination of a number of the installed clamps to verify no inservice degradation has occurred.

For the B111R1 shroud reinspection, CP&L has developed a prioritized/ordered inspection scheme structured to provide sufficient data such that an assessment of the structural integrity and previous cycle crack growth can be determined (see Table 1). The reinspection plan focuses on three objectives: (1) re-examination of selected areas to determine crack growth, (2) examination of a sample of the installed clamps to verify no inservice degradation has occurred and (3) application of improved inspection techniques for welds where surfaces were not accessible with previously used inspection equipment. Specifically, as a minimum, UT examinations will be performed on the accessible areas of welds H6a, H6b and H7 (listed as Priority 1 items in the enclosed Table 1); selected previously inspected areas on weld H5 to assess crack growth (listed as a Priority 1 item in Table 1); and three repair clamps will be VT inspected (listed as a Priority 1 item in Table 1).

Additional inspections will be performed if measurements indicate that crack growth is greater than anticipated (listed as Priority 2 items in Table 1). Predictions from crack growth models indicate that little, if any, crack growth is expected. This is consistent with predictions and actual results from the previous Unit 2 inspection.

UT inspections will be conducted utilizing pulse echo technology. Equipment and procedures for UT, and for any supplemental VT, will be qualified in accordance with the inspection guidelines of the BWRVIP. The NDE uncertainty will be determined in qualification testing by the inspection vendor. These qualifications will follow the BWRVIP inspection guidelines.

An engineering evaluation of the inspection results will be performed using the flaw evaluation guidance issued by the BWRVIP in *"Core Shroud Inspection and Evaluation Guidelines"*, or other alternative industry criteria.

TABLE 1 BNP UNIT 1 CORE SHROUD REINSPECTION - B111R1				
Weld	Scope	Inspection Method	Priority	Comments
H1	100% of Accessible Bottom (Below Ring)	UT	2c	Non-safety related weld. Inspect for crack growth and structural margins.
H2/H3	none	n/a	n/a	Welds repaired by addition of clamps in 1993.
H4	100% of Accessible Area	UT	2b	Additional inspections will be performed if measurements indicate that crack growth is greater than anticipated. Optionally, if H6a, H6b and H7 are all good for multiple cycles then inspect to reset evaluation baseline period. (Weld can be structurally qualified until B112R1 using NDE data from B109R1 and criteria from GENE-523-113-0894.)
H5	As-Required 100% of Accessible Area	UT UT	1 2a	Selected previously inspected areas on weld H5 to assess crack growth Additional inspections will be performed if measurements indicate that crack growth is greater than anticipated. Optionally, if H6a, H6b and H7 are all good for multiple cycles then inspect to reset evaluation baseline period. (Weld can be structurally qualified until B112R1 using NDE data from B109R1 and criteria from GENE-523-113-0894.)
H6a	100% of Accessible Area	UT	1	Inspect 100% of accessible area to obtain data for structural assessment.
H6b	100% of Accessible Area	UT	1	Inspect 100% of accessible area to obtain data for structural assessment.
H7	100% of Accessible Area	UT	1	Inspect 100% of accessible area to obtain data for structural assessment.
H8	none	n/a	n/a	BWRVIP to develop tooling. These areas will be inspected consistent with guidance provided by the BWRVIP in the future.
H9	none	n/a	n/a	Inspected during B110R1
Support Legs	none	n/a	n/a	BWRVIP developing inspection tools/techniques.
Repair Clamps	3	VT	1	VT-3 clamps & hardware for general appearance and missing parts. VT-1 integrity of tack welds.