FENOC
FirstEnergy Nuclear Operating Company
DAVIS-BESSE NUCLEAR POWER STATION

DAVIS-BESSE SYSTEM HEALTH REPORT
FOURTH QUARTER, 2001

PANEL: **PRIMARY EQUIPMENT** **WINDOW NO:** **11**

Last Four Quarters

3rd Qtr 2001	2nd Qtr 2001	1st Qtr 2001	4th Qtr 2000
WHITE	WHITE	WHITE	WHITE

REACTOR COOLANT SYSTEM

WHITE

(a) (2)

Systems covered by this window

062-01, Rx Vessel Internals
064-01, RC Drain Tank
064-02, RCS
064-02, RCS
064-03, RCPs
064-04, Pressurizer
064-05, Pressurizer Quench Tank

RSE-Andrew Siemaszko 7341

JUSTIFICATION

Maintenance Rule Color	Materiel Condition Color		Operator Burden Color	
GREEN	WHITE		GREEN	
(a) (2) Status	Outstanding WOs	8	Operations Workarounds	0
	Temporary Modifications	1	OPS/Chem Burdens/CREOS	0
	Derates	None		

Additional Analysis

- Material Condition Color is White due to the number of open work orders.
- There have been no functional failures this cycle out of 2 allowed. Three year rolling average of unavailability per train is 0.25 hours/year.
- System overall window color remains WHITE due to the TM 00-0026 being installed on the system.
- The outstanding temporary modification, TM 00-0026 (RC262 PRZ Spray Valve Bypass), is for the valve being disabled in closed position. This will be removed in 13RFO.
- The Material Condition and Overall window is currently WHITE. The color is expected to improve to GREEN upon completion of the identified corrective work orders in 13 RFO.

Issues:

- Unidentified RCS leakage was constant following the start up from the 12 refueling outage till mid December. Unidentified RCS leakage then increased steady to 0.15 GPM in March 2001. The unidentified RCS leakage remained at 0.15 till the end of April and steadily decreased to 0.1 in June. Since June the unidentified RCS leakage continued to decrease to 0.08 GPM. RCS leakage is monitored under a Plant Level window entitled Primary Leakage.doc.
  A typical variation in measured RCS leakage of ± 0.05 GPM can be expected due to limitations in the calculation. This issue is discussed in detail in CR 2001-0890.
- The RCS unidentified leakage is low when compared to recent operating cycles. This indicates a relatively tight system.
- Based on benchmarking, Davis-Besse unidentified leakage is as low or lower then all other B&W design plants.

- Through wall leaks have been detected on the Reactor Vessel CRDM penetration nozzles at Oconee and ANO. NRC has issued IB 2001-01 requiring Davis-Besse to inspect all nozzles prior to 12/31/01 or provide JCO. A team [redacted]eaded by Mark McLaughlin is resolving this issue.
- [redacted]YME is leading the efforts to identify all unidentified leak sources during the remaining portion of the power cycle as well as during the Mode 3 walkdown. This is monitored by the Outage Project No. 32. Possible sources of RCS leakage are:

1- RCP studs.

This area can not be viewed in mode 1and 2 due to the high radiation. This is not a likely source of airborne boron due to the fact that the boric acid must flow through the insulation and will deposit on the cold floor.

2- RCP outer gasket.

Same as above.

3- CRD flange.

The CRD flange is the most credible location for the RCS leak source. High temperature of the Reactor Head helps to evaporate any remaining from the leak water. Boron is lifted upward by the force of the Service Structure's cooling air and dispersed into the Containment atmosphere.

4- Reactor head nozzle penetration (CRD).

Nozzle crack of J-Groove weld failure can not be ruled out. There are no evident symptoms available at this time to support such a failure.

5- Reactor head gasket.
6- Continuous Vent Head flanges (Inside Reactor Cavity).
7- Isolation valves for spare CRD on the top of the Service Structure.
8- CRD vent valve.
9- RCS valve bonnet.

RCS valve leakage is the second most credible location for the RCS leak source. Boron may be airborne in one of the cavities and lifted upward by a strong air draft or via the ventilation duct system.

[redacted]Pressurizer Code Relief valve RC 13B / Quench Tank area.

Attempts were made to identify sources of RCS leakage in the containment during the power entry performed in mid February 2001. All accessible in Mode 1 areas were walked down.

- Leakage was identified at the RV outlet nozzle-to-pipe weld in the "A" hot leg loop of the V.C. Summer Nuclear Station in October 2000. This weld is in a 29-inch inside diameter (ID) pipe that is located approximately 36 inches from the reactor vessel wall. As a result of the evaluations performed by the B&WOG, the following conclusions have been reached regarding degradation of RV nozzle-to-pipe attachment welds at B&WOG plants:

1) Through-wall leakage of primary coolant at the RV nozzle-to-pipe locations, resulting from PWSCC, will not occur at the B&WOG plants based on the use of different materials for fabrication and field installation, along with the post weld heat treatment performed on the field welds.

2) The B&WOG utilities comply with 10CFR50.55a and meet the intent of General Design Criterion 14 of Appendix A of 10CFR50.

3) Augmented inspections of RV nozzle-to-pipe welds for PWSCC degradation are not necessary from a safety perspective. However, inspections of these weld locations are performed in accordance with ASME Code Section XI ISI requirements.

4) The B&WOG will continue to evaluate and share B&WOG plant inspection data on Alloy 600 nozzle and welds and participate in agreed upon joint Owners Group activities with the U.S. nuclear industry on this issue.

5) The B&WOG will continue to monitor this issue.

Additional evaluations are underway to assess the safety significance of all Alloy 600 weld locations at the B&WOG [redacted]s. No actions are scheduled to be executed at Davis Besse at this time.

- RCP vibration monitoring Bently Nevada system does not function as required. SYME is pursuing the replacement of the current Bently built vibration and key phaser 9000 series modules. Replacement modules are no longer available. Bently supports repair only, as long as parts are available. A computer will be installed along with module replacement and will replace the old HP computer that is currently out of service. A computer is required for two reasons: --setup of the new modules is accomplished with software --latest generation modules do not have a built in LCD or other vibration readout on them. A PC is also required for display purposes for operations personnel. Currently installed portable monitoring system will be removed and replaced by Bently Nevada model 3500. CR 2000-2364 was issued to monitor resolution to the problem. System Team Meeting was held in June 2001. EWR 01-0208-00 was issued to implement the required modification.
- In March 2001 PRC approved Service Structure replacement project. The Simplified Head modification will eliminate the removable missile shield/head cable/fan assembly, and control rod drive cooling ductwork. Each of these components required excessive outage time, manpower and dose to remove and re-install. A missile shield/fan assembly will be integrated into a permanent structure on top of the head. In addition to saving three days of critical path time and approximately three rem of exposure each outage, the modification provides considerable benefits to protecting personnel and equipment, and reduces outage manpower. System Team Meeting was held in June 2001. EWR 01-0191-00 was issued to monitor implementation of the project. It is expected that the replacement service structure will be rolled into a project to replace the Reactor Vessel Head as soon as 14RFO.

MAINTENANCE RULE
CRITERIA:

RED	> 0 functional failure per cycle or a repetitive functional failure. Unidentified primary leakage > 0.75 gpm. > 100 hours of PORV unavailability
YELLOW	Following implementation of corrective actions for a RED window