

DRESDEN UNIT 2
CYCLE 9
STARTUP TEST NO. 2
CONTROL ROD OPERABILITY AND SUBCRITICALITY CHECK

PURPOSE

The intent of this test is to ensure that no gross local reactivity irregularities exist, that each control blade is latched to its control rod drive, and that all control blades are functioning properly.

CRITERIA

The following must be met:

- a) Each control blade will be withdrawn after the four fuel assemblies in the given control cell are loaded. This will guarantee that the mobility of the control blade is not impaired.
- b) During control blade movement, the process computer is utilized to time the travel of the blade between notch positions and verify proper withdrawal and insertion times.
- c) After the core is fully loaded, each control blade will be withdrawn and inserted individually to assure that criticality will not occur. As it is withdrawn, nuclear instrumentation (SRM's) will be monitored to verify subcriticality. Once withdrawn, each control blade is tested for overtravel by continually applying a withdrawal signal. A blade fails this check if rod position indication is not evident or if an overtravel alarm is received.

RESULTS AND DISCUSSION

Every control blade was withdrawn, checked for overtravel, and inserted to position 00 after fuel was loaded in that given cell. Therefore, each control blade's functional integrity was assured.

All control blades were timed during insertion and withdrawal and were found to be acceptable except for the following items:

- * CRD M-9 moved well but would not give friction test data because of multiple RPIS circuitry problems. This drive, though, was cold scram tested and timed properly before unit startup.

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*CRD's F-2, D-2, and G-5 were friction tested and cold scram tested within limits, but would not time within limits. Two directional control valves (121 and 123) were replaced but with unacceptable results. So it was finally decided to replace all three drives with rebuilt ones. These drives were tested and found to be within acceptable operating limits.

After core loading was complete, each control blade was withdrawn to position 48 to verify subcriticality. The SRM's were observed during the withdrawal and subcriticality was confirmed. All control blades also passed their overtravel checks.