

**NRC URI's
ERO ISSUES**

TITLE / DESCRIPTION:

TSC DIESEL FAILURE

CORRECTIVE MAINTENANCE LEFT ONE OF THE DIESEL GENERATOR CONTROLS IN AN ALIGNMENT THAT PREVENTED THE DIESEL LOAD FUNCTION AFTER STARTING.

PUBLIC DISCUSSION:

NO

APPARENT ROOT CAUSE:

THIS ISSUE WAS CAUSED BY A HUMAN ERROR – INATTENTION TO DETAIL. A PARTIAL RETEST OF THE TSC DIESEL GENERATOR HAD BEEN PREVIOUSLY PERFORMED, AS A PART OF CORRECTIVE MAINTENANCE ON THE STARTING BATTERIES. THE RETEST WAS DERIVED FROM MEMORY OF A REPETITIVE MAINTENANCE INSTRUCTION. THE TESTING UTILIZED "SKILL OF THE CRAFT" KNOWLEDGE, BUT WITHOUT WRITTEN INSTRUCTIONS AT THE WORK LOCATION. A CRITICAL POST-TEST ALIGNMENT STEP WAS MISSED, (SETTING RUN-IDLE CONTROL SWITCH TO THE "RUN" POSITION). THIS CAUSED THE DIESEL TO ONLY ACHIEVE IDLE SPEED AFTER START, WITH A RESULTANT FAILURE TO ENERGIZE THE TSC EMERGENCY BUS. THE LACK OF BUS POWER IMPACTED THE COOLING SYSTEM FUNCTION OF THE TSC DIESEL, RESULTING IN SUBSEQUENT HIGH TEMPERATURE SHUTDOWN.

APPARENT CONTRIBUTING CAUSE:

- INADEQUATE WRITTEN WORK INSTRUCTIONS USED IN THE PERFORMANCE OF THE TSC DG RETEST AND ALIGNMENT.
- NO POST TEST, SECOND PARTY VERIFICATION OF THE AS-LEFT MACHINE ALIGNMENT.
- NO COMPONENT MANIPULATION LOG IN USE, WHICH MAY HAVE PREVENTED THIS ERROR FROM REMAINING UNDETECTED

EXTENT OF CONDITION:

THE EXTENT OF THIS CONDITION IS APPLICABLE TO THE TSC DIESEL THROUGH HUMAN ERROR. THE EMPLOYEE FAILED TO FOLLOW APPLICABLE GUIDANCE. EFFECTIVE APPLICABLE GUIDANCE IS AVAILABLE FOR THE EMERGENCY DIESEL GENERATORS IN THE UNITS, THE ENGINE-DRIVEN FIRE PUMPS AND THE SECURITY DIESEL.

CORRECTIVE ACTIONS:

COMPLETED:

COACHING AND POSITIVE DISCIPLINE HAVE BEEN ADMINISTERED.

ONGOING:

- ADD TO BIENNIAL ELECTRICAL INDUSTRY EVENTS TRAINING.

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- DEVELOP AN OPERATING PROCEDURE FOR THE STARTING OF THE TSC DIESEL GENERATOR FOR BOTH LOADED AND UNLOADED RUNS
- EVALUATE ADDING AN ALARM TO THE TSC ANNUNCIATOR PANEL TO WARN IF TSC DIESEL IS NOT ALIGNED FOR AUTO START/AUTO LOAD.