

UNITED STATES  
ATOMIC ENERGY COMMISSION  
DIRECTORATE OF REGULATORY OPERATIONS  
REGION II - SUITE 818  
230 PEACHTREE STREET, NORTHWEST  
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February 27, 1973

J. G. Keppler, Chief, Reactor Test and Operations Branch, Directorate  
of Regulatory Operations, Headquarters

ADVANCE INSPECTION INFORMATION MEMORANDUM - DUKE POWER COMPANY (OCONEE 1)  
REPORT NO. 50-269/73-2

During the inspection of February 7-16, 1973, the Oconee Nuclear Plant Superintendent, J. E. Smith, notified the inspector of deficiencies in the design and/or manufacture of the undervoltage trip assemblies of the control rod drive trip breakers and indicated a report as required by 10 CFR 50.55(e) would be sent to the AEC.

While at the reactor site, the inspector obtained the following preliminary information concerning the deficiencies.

The control rod drive (CRD) system has two General Electric, 600 amp, 600 volt, AC breakers (Model 224A6147-200 KE, A62A-25-1) and four General Electric, 225 amp, 600 volt, DC breakers (Model 224A3510-346 KE, A62-15-2).

On September 13, 1972, an undervoltage coil on one of the DC breakers failed. The coil was charred from excessive heat and some damage to the breaker internal wiring occurred. The coil failure resulted in tripping of the 20 amp circuit breaker in the associated reactor protective system cabinet. The interconnecting wiring and the manual trip switch were inspected and found undamaged.

On January 16, 1973, an undervoltage coil on one of the AC breakers failed.

Since then, five amp fuses have been installed in each reactor protective system cabinet undervoltage coil circuit to protect against possible damage that could be caused by coil failures.

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J. G. Keppler

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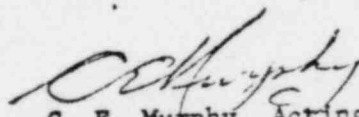
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On January 23, 1973, while CRD breaker test was in progress, the CB-2 DC breaker failed to trip when voltage was removed from the undervoltage coil. Tests of the breakers (six per each reactor plus one spare) revealed the undervoltage device dropout spring on the affected breaker had less spring tension (352 grams) than the other 18 breakers (~ 500 grams). The tension on this spring directly controls the voltage at which the undervoltage device will drop out and indirectly governs the force available to trip the breaker.

Of the undervoltage devices tested, with spring tension adjusted to approximately 500 grams, the average pickup voltage was 83 volts and the average drop out voltage was 47 volts. The undervoltage device found set at 352 grams picked up at 62 volts and dropped out at 35 volts.

When tested, 18 out of 19 undervoltage coils had resistance readings of 12-15 ohms. General Electric supplied replacement undervoltage coils which had the same part numbers (assembly No. 269C282G2 and Coil No. 75081G26) as the old coils; however the new coils have 24-26 ohms resistance. The new coils picked up at 92 volts and dropped out at 65 volts.

Based on the requirements of paragraph 50.55(e) to 10 CFR 50, the licensee has agreed to submit a report of the above information to the AEC.

  
C. E. Murphy, Acting Chief  
Facilities Test and Startup  
Branch

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