

Special Report for LGS Unit 1
D14 Emergency Diesel Generator (EDG)

On November 29, 1995, with Unit 1 at 100% power, Operations personnel were performing Surveillance Test (ST) procedure ST-6-092-318-1, "D14 Diesel Generator (Fast Start) Test Run." During the performance of this ST procedure, the D14 EDG experienced pressurization of the crankcase. The D14 EDG was shutdown and declared inoperable at 1132 hours on November 29, 1995.

A detailed troubleshooting plan was implemented based upon the symptoms experienced during performance of the ST procedure. These symptoms included crankcase vacuum manometer evacuation, high crankcase pressure indication, crankcase seal oil leakage, and exhaust manifold smoking. Troubleshooting eliminated the possibility of piston, cylinder or ring damage and suggested that the crankcase experienced slow-to-rapid pressurization. The D14 EDG was subsequently inspected for jacket water leakage, exhaust blockage, blower seal leakage, ejector or orifice clogging, and crankcase piping/fitting integrity. Each of these possibilities, with the exception of the crankcase piping/fitting integrity, was eliminated through inspection.

The crankcase fittings (Flexmaster), located on the piping from the airbox and crankcase to the ejector housing, were inspected. The Flexmaster fittings were not loose (as in the case of the subsequent D21 crankcase pressurization on November 30, 1995). Upon closer inspection, however, the following conditions were discovered on the crankcase ejector; 1) an embrittled rubber grommet on an ejector fitting, 2) a missing pipe clamp on an ejector pipe, and 3) a dent on the same pipe at the flexmaster fitting connection. Although not conclusive, these Flexmaster fitting and piping conditions at the ejector housing may have caused the high crankcase pressure experienced by the D14 EDG. Appropriate repairs were completed, and the D14 EDG was successfully tested and returned to service at 1130 hours on December 2, 1995. As a followup, the remaining Unit 1 EDGs were inspected and operated at load. No similar problems were identified.

The D14 EDG failure was classified as a valid failure using the guidance of RG 1.108, Revision 1, August 1977, Section C.2.e(5). Since this D14 EDG valid failure is the first failure in the last 20 valid demands, the ST procedure monthly frequency is not required to be changed in accordance with TS Section 4.8.1.1.2.a.

Analysis of the D14 EDG failure continues. Corrective actions to prevent recurrence will be developed and implemented as necessary. A supplement to this Special Report will be provided if significant findings are identified.