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 AUTH. NAME AUTHOR AFFILIATION  
 SAILER, W.F. Gilbert/Commonwealth, Inc. (formerly Gilbert Associates, In  
 RECIP. NAME RECIPIENT AFFILIATION  
 MURLEY, T.E. Office of Nuclear Reactor Regulation, Director (Post 870411

SUBJECT: Part 21 rept re possibility of overload of emergency diesel generator during loss of offsite power & LOCA event.  
 Initially reported on 871111. Design changes to ensure that total diesel load requirement below rating underway.

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**Gilbert/Commonwealth** engineers and consultants

GILBERT/COMMONWEALTH, INC., P.O. Box 1498, Reading, PA 19603/Tel. 215 775-2600/Cable Gilasoc/Telex 836-431

November 16, 1987

W.F. SAILER  
Vice President & General Manager  
Quality Assurance Division

United States Nuclear Regulatory Commission  
Office of Nuclear Reactor Regulation  
Washington, DC 20555

Attn: Dr. T. E. Murley, Director

Re: Reportable Event  
Emergency Diesel Generator  
Loading

Dear Dr. Murley:

This documents a report by telephone under the provisions of 10CFR21 on November 11, 1987, at approximately 4:15 p.m. to Mr. Ray Smith.

Individual Who Reported

Mr. W. F. Sailer, Vice President and General Manager, Quality Assurance Division, Gilbert/Commonwealth, Inc.

Facility/Component/Activity Involved

Design of the diesel loading at the Crystal River Nuclear Plant Unit #3, owned and operated by the Florida Power Corporation.

Firm Supplying the Basic Component

Gilbert/Commonwealth, Inc., performed the diesel generator loading design.

Nature of the Failure to Comply/Safety Hazard Created

To assess the emergency diesel generator capabilities, a load calculation was performed during the original plant design phase. The methodology for this calculation consisted of summing the connected KVA and applying an assumed power factor of 0.8 to determine load kw. The assumption of the 0.8 power factor was consistent with the diesel generator nameplate ratings and the calculation indicated sufficient margin was available.

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In January 1980, a supplemental diesel loading calculation was performed to include the motor-driven emergency feedwater pump onto the diesel loading. This supplemental calculation followed the same methodology as the original calculation, such that, an 0.8 power factor was assumed in lieu of actual load power factors. The supplemental calculation concluded that the emergency feedwater pump could be added to the diesel but the total load was in excess of the 2000 hour rating of 3000 kw but within the 30 minute rating of 3300 kw. Recent updates of the loading calculation have determined that the resultant load power factor is in the order of 0.9 yielding a total kw load in excess of the diesel generator's 30 minute rating.

The existing design could create a substantial safety hazard due to the overloading of the Diesel Generator Unit under the worst case loading scenario. This scenario considers a loss of offsite power coincident with a large break LOCA and failure of the "B" diesel generator.

Date Information was Obtained

The Reporting Officer, W. F. Sailer, was informed on November 11, 1987, of the reportability of this item.

Number and Location of Components

The noncompliance described above is an isolated case for the Crystal River Nuclear Plant Unit #3 diesel generator system.

Corrective Action

Design changes to delete noncritical loads such as heat tracing and modifications to enable the turbine driven emergency feedwater pump to be operative for a postulated failure on the "B" channel system are being implemented to ensure that the total diesel loading requirement is below its rating for all postulated scenarios.

If you require any further information, please call me at (215) 775-2009.

Very truly yours,

W. F. Sailer  
Vice President and General Manager  
Quality Assurance Division

WFS:dh

cc: T. E. Murley - NRC (2)  
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