



LONG ISLAND LIGHTING COMPANY

175 EAST OLD COUNTRY ROAD • HICKSVILLE, NEW YORK 11801

July 6, 1979

JNRC-234

Mr. Boyce Grier, Director
Office of Inspection & Enforcement, Region I
U.S. Nuclear Regulatory Commission
631 Park Avenue
King of Prussia, PA 19406

Jamesport Nuclear Power Station - Units 1 & 2
Inspection & Enforcement Bulletin 79-02; 79-02 Rev 1
Docket Nos. 50-516
50-517

Dear Mr. Grier:

In reply to Inspection & Enforcement Bulletin 79-02 as revised on June 21, 1979, we have reviewed the Jamesport Nuclear Power Station (JNPS) design and submit the following response.

The design for attaching pipe supports in JNPS is based on embedded base plates, embedded strip plates and/or base plates with Richmond inserts which are cast in place. The use of drilled-in concrete anchors is not preplanned. However, in the event that support attachment plates must be located where no embedment or Richmond inserts exist, drilled-in concrete anchor bolts may have to be used. If this becomes the case, the JNPS pipe support base plates will be designed in accordance with Stone & Webster generated procedures and installed by a drilled-in anchor specification which will address the four items of the referenced NRC Bulletin as described below:

1. A Stone & Webster generic procedure has been developed which will be applied to the JNPS common pipe support base plate configurations to account for plate flexibility in determining drilled-in anchor bolts design loads. In this procedure, the finite element analysis technique is used to develop load factors which are applied to anchor bolt design loads to provide for the affects of plate flexibility.

A finite element model will be used to determine loads in the drilled-in anchor bolts. Plate flexibility, anchor stiffness, stiffening effect of member attached to the plate, as well as concrete flexibility are represented in the

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model. The element model considers pure plate bending, appropriate for the analysis of flexible base plates. The contact boundary conditions at the interface of the plate and concrete, and plate and drilled-in anchors are satisfied in the solution. Forces are applied as couples and axial forces distributed to nodes of the attached member. The ANSYS 3 finite element package will be used for analysis.

2. The Project design procedure and specification for drilled-in anchors at JNPS will describe the design loads, purchasing requirements and installation for wedge-type anchor bolts. The average ultimate strength of bolts will be a minimum of four times the design value used in the design procedure. This minimum factor of safety of four is based on the average ultimate capacity determined from static load test conducted by anchor manufacturers in 3000 psi concrete. The anchor bolt installation torques and ultimate capacity will be verified from manufacturer's test data and/or on-site testing. Shell-type anchor bolts will not be used for JNPS Category I pipe support design.
3. To account for cyclic loadings, the JNPS design procedure will use a conservative design load with a minimum factor of safety of four with respect to the average ultimate bolt capacity. Conclusions of the Fast Flux Test Facility (FFTF) Report on "Drilled-In Expansion Bolts Under Static and Alternating Load" (BR-5853-C-4, dated January 1975) indicate that properly installed anchors performed satisfactorily under cyclic loads. The installation requirements of the specification will ensure proper bolt installation.
4. The JNPS specification for drilled-in anchors will require that the minimum installation torque for proper setting of the anchors shall develop a bolt preload of at least 1.5 times the bolt design load. All Category I anchors will be torque tested to 80% of this torque value, assuring cyclic load capability.

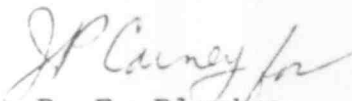
The JNPS specification for drilled-in anchors will require all bolts to be stamped with a mark, visible after installation, indicating bolt length. This will enable field

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quality control to determine that the proper length bolts
have been installed.

Should you require further information, please do not hesitate to
contact us.

Very truly yours,



R. E. Plaskon
Assistant Project Manager
Jamesport Nuclear Power Station

LG/dm

cc: Mr. John G. Davis, Director
Office of Inspection & Enforcement
U.S. Nuclear Regulatory Commission
Washington, D.C. 20545

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