Franklin Research Center
A Division of The Franklin Institute

June 30, 1980

United States Nuclear Regulatory Commission
Washington, D.C. 20555

Attention: Mr. E. J. Butcher, Jr.
Project Officer

Reference: FRC Project C5257
NRC Contract NRC-03-79-118
NRC TAC No. 10161
FRC Task Nos. 201, 208: North Anna Units 1 and 2
Title: Containment Purge Request-for-Information

Dear Mr. Butcher:

Enclosed is the Request-for-Information for North Anna Units 1 and 2, which was revised in accordance with discussions among NRC and FRC engineers on May 28, 1980.

Very truly yours,

S. P. Carfagno
Project Manager

SPC/ih

cc: D. Tondi
J. T. Beard

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ENCLOSURE

REQUEST FOR ADDITIONAL INFORMATION FOR BYPASS AND RESET OF ENGINEERED SAFETY FEATURES FOR NORTH ANNA UNITS 1 and 2 DOCKET NO. 50-338

1. The information presented in your FSAR and your letters of January 17, 1979 and December 20, 1979, is not sufficient to determine if the following requirements are met for the safety signals to all Engineered Safety Features (ESF) equipment. Therefore, identify and justify all exceptions to the following:

   Criterion 1 - In keeping with the requirements of General Design Criteria 55 and 56, the overruling[a] of one type of safety actuation signal, e.g., radiation, should not cause the blocking of any other type of safety actuation signal, e.g., pressure, for those valves that have no function besides containment isolation.

   Criterion 2 - Sufficient physical features e.g., key lock switches, are to be provided to facilitate adequate administrative controls.

   Criterion 3 - A system level annunciation of the overridden status should be provided for every safety system impacted when any override is active. (See R.G. 1.47.)

   Criterion 4 - Diverse signals should be provided to initiate isolation of the containment ventilation system. Specifically, containment high radiation, safety injection actuation, and containment high pressure (where containment high pressure is not a portion of safety injection actuation) should automatically initiate containment ventilation isolation.

   Criterion 5 - The instrumentation and control systems provided to initiate the ESF should be designed and qualified as safety grade equipment.

   Criterion 6 - The overriding or resetting[b] of the ESF actuation signal should not cause any valve or damper to change position.

2. In addition to responding to the general question above, please provide the following specific information:

   (1) Provide a tabulation of the following information for each valve or damper in the Containment Depressurization, Containment Atmosphere Cleanup, and Habitability (i.e., control room) Systems which operate automatically following an accident:

The following definitions are given for clarity of use in this evaluation:

a - Override: the signal is still present, and it is blocked in order to perform a function contrary to the signal. The term "override" where used in this Request for Information, includes functionally equivalent techniques of signal modification, e.g., "bypass".

b - Reset: the signal has come and gone, and the circuit is being cleared in order to return it to normal condition.

a. Component designation
b. System served
c. Safety function, e.g., containment isolation, spray initiation
d. Actuation signal sources
e. Reference to control circuitry (see 2.(3) below)
f. Indication whether or not the component safety function indicated in 2.(1) above can be defeated through the use of a manual override in either the control system or actuation signal system circuitry.

(2) For each manual override feature identified in 2.(1) above, provide a description of the physical feature(s) furnished to prevent inadvertent operation and to satisfy the requirements of IEEE Std 279-1971, Section 4.14.

(3) For each actuation signal system and component actuation system identified in 2.(1)d and 2.(1)e above, incorporating a manual reset or override feature, provide a complete circuit description, including detailed pictorial information (i.e., as built circuit diagram, schematics, logics) sufficient to allow a thorough understanding of the operation of such circuitry, including the function and effect of all control devices (e.g., relays, contacts, switches, diodes, etc.).

(4) For each actuation signal identified in 2.(1) above, identify the design standards, quality assurance requirements, and component qualification standards involved to ensure that the systems will perform their designated safety function upon demand.