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February 2, 1984

Mr. D. G. Eisenhut, Director
Division of Licensing
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Re: Catawba Nuclear Station
Docket Nos. 50-413, 50-414

Dear Mr. Eisenhut:

Generic Letter 83-28, "Required Actions Based upon Generic Implications of Salem ATWS Events", requested information concerning the status, plans and conformance with positions contained in the letter. Duke Power Company's response for Catawba Nuclear Station was submitted on November 4, 1984. This response included a commitment to provide additional information related to design verification and qualification testing for procurement of safety related equipment (Section 2.2.1.5). Attachment 1 provides a description of how these activities are accomplished.

Please advise if there are any questions concerning this matter. I declare under penalty of perjury that the statements set forth herein are true and correct to the best of my knowledge.

Very truly yours,

Hal B Tucker/gc

Hal B. Tucker

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Attachment

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Catawba Nuclear Station

NRC GENERIC LETTER 83-28

Item 2.2.1-5

2.2.1-5 Duke Power interprets this Generic Letter paragraph in a broad sense, that is, it envelopes both harsh and mild environment areas for all mechanical and electrical equipment which is classified as safety-related. A discussion of procurement actions for these areas follows, along with related surveillance activities which continually verify that equipment has not exceeded any "limit of life".

It should be recognized that the Salem event which resulted in Generic Letter 83-28 did not reveal that a component remained in service beyond a predetermined cyclical or environmental-exposure life limit. Routine lubrication of a complex circuit breaker mechanism (located in a "mild" environment) could have prevented the Salem incident. A breaker mechanism subassembly cannot replace the operability assurance provided by a comprehensive planned periodic maintenance program on this or similar equipment. A component life limit established under laboratory conditions may not represent actual service life. It has been and continues to be Duke Power's philosophy to utilize comprehensive maintenance and surveillance programs for safety-related electrical equipment.

Safety-related equipment and subcomponents are procured utilizing Duke Power specifications, appropriate Industry design and qualification standards and/or industry model numbers which invoke or imply specification. This provides assurance of material compatability and rating for the intended service, both for normal and postulated accident conditions.

Procurement activities are augmented by surveillance and maintenance actions which assure that limits of life have not been exceeded.

Typical qualification tests performed for equipment presently in service in either harsh or mild environments did not include the establishment of component life limits based upon cyclical wear-in testing. Wear related characteristics are addressed by the comprehensive surveillance and maintenance programs discussed at a later point in this response and by manufacturers experience. Procurement specifications for safety-related equipment items in general describe the environmental service conditions for the equipment in its intended application.

For certain equipment items there are predesignated "limits of life recommended by the manufacturer". When identified by the supplier, these periodic replacement activities are included in station preventive maintenance programs. It should be noted that these replacement actions are typically the result of thermal/radiation aging sensitivities rather than wear-related part deterioration.

Equipment items utilized in areas classified as mild environments are selected for their demonstrated ability to function in standard industrial-type environments. Qualified lifetimes for this equipment do not typically exist but may be specified by the manufactuer based on his design verification testing. The mild environment equipment is typically selected for its ability to perform satisfactorily for extremely long periods of time. This ability is usually demonstrated in other generating facilities, whether of a hydro, fossil or nuclear design or it may be demonstrated in routine application in various industries.

Safety-Related replacement subcomponents are purchased in one of several ways. These subcomponents may be purchased from the original or an alternate vendor or components may also be procured by reference to an industry recognized part number which establishes equivalency. In all cases, the manufacturer of the replacement item is identified and determined to be acceptable based upon past experience with his products.

Surveillance and Maintenance Program

It is the goal of plant surveillance activities to verify the operable status of safety-related equipment and systems. Maintenance procedures are established for safety-related equipment to perform corrective and periodic preventive maintenance activities and to establish a vehicle to take advantage of experience.

Numerous methods exist to augment specific equipment experience gained at a particular nuclear station including material or equipment application, manufacturing deficiencies, limitation of useful life, abnormal operating conditions or other characteristics. This experience is shared throughout the industry through various mechanisms such as NOTEPAD, INPO/EPRI investigations, vendor information letters and NRC Bulletins and Information Notices. These inputs expand upon the recommendations provided by a manufacturer, which is the typical starting point for maintenance procedure development. Manufacturer's recommendations do not usually contain specified limits of life values since conservative designs and production quality verification normally achieve extremely long component lifetimes. This provides a competitive product which gains user acceptance for various industrial applications. Therefore, existence of a life limit is considered to be an unusual condition other than thermal/radiation aging of equipment.

The existence of unknown component life limits are determined during periodic surveillance/performance testing. These test results are reviewed and utilized to accelerate maitenance when necessary. Functional verification tests are also performed to document the acceptability of mechanical and electrical repair work. These activities are thorough in nature and are patterned after guidelines established by organizations such as INPO, ASME, ANSI, etc., in addition to NRC requirements.

Although it is possible that an as-yet undetected life limit on a safety-related component may exist, it is extremely unlikely that the failure would occur simultaneously in both redundant safety equipment trains.

In addition, the design of certain electrical safety systems provide for automatic backup for equipment failure in order to achieve overall reliability improvements.

In summary, sufficient information is available to make the determination as to equipment condition whereby the equipment is acceptable for continued service, upgraded, periodically maintained or replaced.