



UNITED STATES
NUCLEAR REGULATORY COMMISSION

WASHINGTON, D.C. 20555-0001

June 14, 1999

MEMORANDUM FOR:

Docket File

FROM:

Frank Rinaldi, Project Manager, Section 1
Project Directorate II
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

SUBJECT:

MCGUIRE NUCLEAR STATION -- FACSIMILE
TRANSMISSION, ISSUES TO BE DISCUSSED IN AN
UPCOMING CONFERENCE CALL REGARDING LICENSEE'S
RESPONSE TO GENERIC LETTER 98-04
(TAC MA4064 AND MA4065)

The attached two documents (Attachments 1 and 2) were transmitted by fax today to Ms. Allison Jones-Young of Duke Energy Corporation (DEC) to prepare her and others for an upcoming telephone conference. This memorandum and the attachments do not convey a formal request for information or represent an NRC staff position.

Docket Numbers 50-369 and 50-370

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**McGuire and Catawba Nuclear Stations
Issues for Discussion in a Telephone Conference**

Stated in Duke's submittal stated: "The overall condition of the coatings was satisfactory with only minor localized coating deficiencies noted." Describe these areas of minor localized coating deficiencies:

Type of deficiencies (i.e., delamination)
Location
Approximate size of area affected

Have there been any major recoatings in containment? If so, when and approximately how much area was recoated?

APPLIED CONTAINMENT COATINGS SURVEY

PURPOSE: Identify containment protective coatings which have been applied to steel and concrete substrates at time of plant construction and other coatings applied at a later date resulting from maintenance and/or replacement of coated surfaces.

NEEDED: RES (in support of an NRR User Need Letter) has initiated a coatings research program at W-SRTC (Aiken SC) for the purpose of determining coating systems failure mechanisms, estimated time to failure during the post-LOCA period and identification of the failed coating debris characteristics (e.g. failed material composition, geometry and size characteristics). This information will be used to identify applied Class I coatings (see DG-1076, 3/1999, for coating designation definitions) which should be considered for evaluation in SRTC's coatings program.

The failed coating(s) debris characteristics identified will be used for GSI-191 (PWR Sump Blockage) studies to evaluate the potential for transport of such debris to the ECCS sump during the post-LOCA period.

Coatings Related Information::

- Class I coating systems applied to steel and concrete substrates within containment at time of construction and coatings applied during the plant operating life for purpose of coating condition maintenance and/or replacement.

The following coating systems were identified recently by a Phenomena Identification and Ranking Table (PIRT) coatings panel (comprised of NPP containment coatings experts) are provided as examples of typical coatings systems applied in NPPs.

Steel substrate, Inorganic Zinc Primer, Epoxy Phenolic Topcoat
Steel substrate, epoxy phenolic primer, epoxy phenolic topcoat
Steel substrate, inorganic zinc primer, epoxy topcoat
Steel substrate, epoxy primer, epoxy topcoat
Concrete substrate, surfacer, epoxy phenolic topcoat
Concrete substrate, surfacer, epoxy topcoat
Concrete substrate, epoxy phenolic primer, epoxy phenolic topcoat
Concrete substrate, epoxy primer, epoxy topcoat

- Identification of coating material designation (i.e. Carboline 930). Although generic coating types are identified above, identification by trade name or replacement product is desirable.
- Coating materials manufacturer (e.g. Ameron, Carboline, Keeler & Long). This information is needed if specialty formulations will need to be procured.

- Identification of steel and concrete coated regions and components (eg. containment dome, mid level, lower level, sump proximity) by location and approximate area coverage for the major Class I coating systems. Some of this information may already be summarized in UFSARs or the licensee may have onsite studies (or other information) the staff can review as needed. Reference to such information is an acceptable response.
5. Chemicals (or other materials) used for cleaning, or washing down, coated surfaces following reactor refueling and identification of those coatings subjected to such cleaning materials and location

Other useful information (if readily available)::

1. Coating materials physical properties such as: adhesion, ductility, expansion and other mechanical properties.
2. Operating and shutdown environmental conditions such as: typical radiation dose levels and thermal environment. A range of temperature conditions, dose levels and humidity levels (power operation and refueling periods) would be useful for consideration preparing test samples..
3. Coating specification, procurement and application requirements and where located or referenced if such information needs to be accessed at a later time..

NEEDED: Plant coating samples which could be made available for testing at SRTC. to gain simulated DBA survival insights for comparison with current DBA test coupons which are said to "bound" post-LOCA conditions. Examples: coated steel (i.e. 6 in by 6 in or smaller) which has been removed from containment following snubber relaxation activities, failed coating section which has remained intact)

Schedule: SRTC program is underway and plant survey information needs acquired by end of June 1999 would provide a means to better ensure that a major coating system had been missed. Coatings samples/specimens will be gratefully accepted throughout CY 1999.

Sample Containment Coating Data Input Table

Plant Identification: _____

Component/ Substrate	Substrate (Surf. Prep)	Primer (Surf. Prep.)	Top Coat	Location Applied	Estimated Surface Area	Surface Temp. Normal	Surface Temp. Design
Example No. 1	Steel (Grit blast)	Inorganic Zinc Carboline 910	Epoxy Phenolic Carboline 930	Containment Liner	10,000 sq ft	80F to 120 F	275F
1							
2							
3							

Note: Identification of surface preparation process applied to substrate and primer prior to coating application is important information.

Component/ Substrate	Design Exposure Levels (G) plant operation	DBE	Application Date(s) (Est.)	Applicable Coating Application Requirements or Standards	Coatings Applicator	Q/A Inspection Conducted By
Example No. 1	100 mr/hr	500 mr/hr	9/8/80 6/30/81	Appendix B to 10 CFR Part 50, RG 1.54	Bechtel Bechtel	S&L S&L
1						
2						
3						