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SEP 13 1988

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MEMORANDUM TO FILE:

On August 29, 1988, a meeting was held with the Nuclear Management and Resources Council (NUMARC) in the office of Victor Stello, Jr., EDO/NRC. The following persons were in attendance:

- V. Stello, EDO/NRC
- T. Murley, Director, NRR/NRC
- T. Martin, EDO Staff/NRC
- W. Kennedy, EDO Staff/NRC
- B. Lee, NUMARC
- J. Colvin, NUMARC
- W. Raison, NUMARC
- B. Hayes, Director, OI/NRC (part-time attendance)

This meeting was held for the purpose of discussing the recent activities undertaken by NUMARC with regard to the use of counterfeit material by the commercial nuclear power industry.

The following topics were discussed:

1. NUMARC and industry activity associated with NRC Bulletin 88-05 on non-conforming materials.

The NUMARC presentation in this area is synopsised in enclosure 1. The NRC stated that NUMARC and the industry must focus on the stress value at which ASME Code materials are no longer in compliance. The NRC also expressed concern about the dependency of the NUMARC hardness/stress correlations on impurities in the materials tested.

2. NUMARC and industry activity associated with NRC Information Notice 88-46 on defective, refurbished electrical equipment.

The NUMARC presentation in this area is synopsised in enclosure 2. The NRC expressed concern that NUMARC has not looked at non-safety-related purchases from the suspect suppliers, particularly due to the potential for upgrading this equipment for safety-related use. NUMARC indicated that they would expand their review to include non-safety-related purchases.

3. NUMARC stated that a nuclear plant equipment procurement working group has been established and headed by William Cavanaugh, III of System Energy Resources, Inc. The members of this group are listed in enclosure 3. NUMARC stated that no schedule had yet been established for the work output of this group.

? they missed the mark

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- 4. The NRC stated that Frank Miraglia would be the new primary contact in NRR for counterfeit material.

Original prepared by
Victor Stello

Victor Stello, Jr.
Executive Director for Operations

Enclosures:

- 1. NUMARC's Summary Status of NRC Bulletin 88-05
- 2. NUMARC's Status of Review of Suspect Electrical Components Issue
- 3. Nuclear Plant Equipment Procurement Working Group

cc w/enclosures:
Public Document Room

Mr. Joe Colvin
Executive Vice President
and Chief Operating Officer
NUMARC
1776 Eye Street, NW
Washington, DC 20006-2496

Distribution:

- V. Stello, EDO
- J. Taylor, DEDO
- J. Hoyle, AO/OEDO
- J. D. Martin, ODEDRO
- T. Murley, NRR
- B. Hayes, OI
- EDO R/F
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Document: NUMARC Memo to File

FC	: ODEDRO	: DEDO	: EDO	:	:	:
AME	: TOMartin:ph	: JMTaylor	: VStello	:	:	:
ATE	: 9/6/88	: 9/17/88	: 9/17/88	:	:	:

Summary Status of B805

August 29, 1988

1. Original records review and field testing requirements suspended by NRC for plants with full power operating licenses, effective August 3. NTOLs and plants with low power operating licenses must complete records review and field test requirements.
2. NUMARC is currently assembling final report for submittal to NRC. NRC meeting to present conclusions and submit final report is scheduled for ~~September 27~~. If data trends continue, it is expected that final NUMARC report will conclude that no further utility action is necessary to permanently close this issue.
3. Records review and field test data have been supplied to NUMARC by nearly all nuclear plants.
4. Analysis of data to date continues to indicate vast majority of WJM/PSI supplied material to be code material. A very small number of blind flanges have been identified which have similar properties to the flanges identified by CP&L which precipitated NRC issuance of Supplement 1. These blind flanges exhibit tensile strengths on the order of 45 ksi. NUMARC's generic stress analysis submitted to NRC by letter of July 22 would be expected to envelope these few cases.
5. Based on extensive (over 300 components) laboratory testing, NUMARC has developed a direct correlation from Equotip "Leeb Number" to tensile strength. Use of this correlation is essential for accurate interpretation of field test results.
6. Use of existing ASTM correlations from "Leeb Number" to Brinell Number and then to tensile strength will give consistently inaccurate (low) results. Results from many plants have been previously reported in this fashion. The vast majority of results previously reported as "failures" are in fact code material and were reported based on application of the above conservative correlations.
7. NTOL plants will use the NUMARC correlation, along with an AISI (American Iron and Steel Institute) paper addressing variability of code material, as the basis for demonstrating code acceptability of present WJM/PSI components to Authorized Nuclear Inspection Agencies. The Authorized Inspection Agency for Vogtle 2 has indicated that this approach is acceptable.

REB/

CHRONOLOGY OF NUMARC ACTIVITIES RE NRCB 8805

- May 6 - Bulletin 88-05 issued by NRC
- May 31 - NUMARC initial meeting with NRC on 88-05
- June 7 - NUMARC announces generic effort to address 88-05, forms AHAC
- June 13 - NUMARC holds initial 88-05 AHAC meeting
- June 15 - NRC issues Supplement 1 - expedited review and testing required, forces restructuring of elements of NUMARC generic program
- June 27 - NUMARC meets with NRC to propose generic plans for field testing and acceptance criteria
- June 28, 29, 30 - NUMARC sponsored field testing workshops held by EPRI
- June 29 - 88-05 AHAC meets again to review generic plan
- June 30 - NUMARC holds 88-05 workshop for all nuclear utilities
- July 6 - NUMARC meets with NRC to present generic plan
- July 6 - NUMARC meets with National Board of Boiler and Pressure Vessel Inspectors
- July 12 - NUMARC promulgates EPRI developed temperature correction factors for field testing
- July 15 - NUMARC meets with NRC to discuss field testing and generic JCO
- July 22 - NUMARC meets with NRC, presents data analysis and generic JCO, and requests suspension of utility records review and testing activities
- July 25 - NUMARC formally requests suspension of requirements by letter to NRC
- July 29 - NUMARC provides further field test data analysis supporting suspension to NRC
- August 3 - NRC issues Supplement 2 suspending testing for full power OLS
- August 10 - NUMARC meets with NTOLs and low power licensees to determine appropriate actions
- August 18, 19 - NUMARC meets with EPRI and Bechtel to plan final report
- September 27 (Scheduled) - Meet with NRC to present and submit final NUMARC report

REB/

DATA ANALYSIS - all "present" numbers preliminary

At the time of suspension (August 3), records reviews for primary suppliers were approximately 70% complete. Testing of accessible identified components was approximately 30% complete.

	<u>Interim Report</u>	<u>Present</u>
Total record reviews	N/A*	50,000+
Percent of total population represented by fittings	N/A*	less than 5%
Percent of total population represented by stainless	N/A*	less than 2%
Total field hardness tests	1334	5700
Number of substrength blind flanges in field results	3	20
Total utility tensile tests	108	108
Total Bechtel laboratory results (hardness, tensiles, chemistry)	123	300

* Interim report did not address

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STATUS REVIEW OF SUSPECT ELECTRICAL COMPONENTS ISSUE

- NUMARC HAS MET SEVERAL TIMES WITH NRC STAFF TO PROVIDE FEEDBACK AND FOCUS ON THIS ISSUE
 - JULY 12th, JULY 15th, AUGUST 2nd, AUGUST 9th AND AUGUST 19th

- NUMARC REVIEWED 7 UTILITY QUALIFIED BIDDERS LISTS AGAINST THE LIST OF 56
 - ONE SUPPLIER IDENTIFIED ON TWO LISTS

- NUMARC HAS DEMONSTRATED THAT PMS ISSUE IS NOT A GENERIC PROBLEM
 - ONLY 7 OF 33 PLANTS IDENTIFIED BY THE STAFF ACTUALLY RECEIVED ITEMS FROM PMS

- NUMARC, WITH INPUT FROM ITS AD HOC ADVISORY COMMITTEE, PROVIDED COMMENTS ON THE DRAFT BULLETIN REGARDING SUSPECT ELECTRICAL COMPONENTS
 - FOCUS ON SAFETY RELATED PROCUREMENT AND UPGRADES TO SR
 - PROPOSED INITIATIVE TO ADDRESS "INDUSTRY'S PROBLEM"

- NUMARC HAS INVESTIGATED THE PURCHASE ACTIVITY IDENTIFIED IN 88-46, SUPP 1:
 - HALF THE PURCHASE ORDERS CITED INVOLVED NON-NUCLEAR FACILITIES
 - ONLY 12 OF OVER 200 CIRCUIT BREAKERS LISTED WERE UPGRADED TO SR, ONLY ONE OF THOSE 12 WAS INSTALLED
 - THE REST OF THESE 12 ARE ON HOLD; THREE HAVE FAILED TESTING

- NUMARC HAS INVESTIGATED THE PRIMARY ELECTRICAL DISTRIBUTORS OF AHAC MEMBER UTILITIES
 - 27 DISTRIBUTORS REVIEWED BY 7 UTILITIES
 - 8 DISTRIBUTORS HAD DONE BUSINESS WITH THE SUSPECT LA SUPPLIERS

- NUMARC HAS RESEARCHED INPO NPRDS AND FOUND NO DISCERNABLE FAILURE TRENDS FOR ANY MOLDED CASE CIRCUIT BREAKERS

- NUMARC HAS INITIATED DISCUSSIONS WITH THE NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION (NEMA) AND UNDERWRITERS LABORATORIES (UL)

- NUMARC HAS PROPOSED TO LEAD THE INDUSTRY IN ADDRESSING CONCERNS REGARDING ADEQUACY OF BALANCE OF PLANT ELECTRICAL COMPONENTS IN LIEU OF REGULATORY ACTION IN THIS AREA

STATUS OF IN 88-19

IN 88-19 (PMS ISSUE)

WE HAVE SURVEYED THE 24 UTILITIES (33 PLANTS) AND 1 A/E IDENTIFIED AS POTENTIAL RECIPIENTS OF ITEMS FROM PMS, INC.

OF THESE, 3 UTILITIES REPRESENTING 6 OPERATING PLANTS HAVE RECEIVED ITEMS FROM PMS.

THESE ORGANIZATIONS ARE ACTIVELY EVALUATING THE IMPACT OF THEIR PMS ITEMS ON THEIR FACILITIES.

WE BELIEVE THAT THE INDUSTRY HAS EFFECTIVELY ISOLATED INSTANCES OF EXPOSURE TO PMS' QUESTIONABLE CERTIFICATION ACTIVITIES AND IS ACTIVELY ADDRESSING THOSE FEW CASES KNOWN TO EXIST. THEREFORE, WE BELIEVE THAT PMS IS NOT A GENERIC CONCERN AND SHOULD NOT BE CONSIDERED FOR INCLUSION IN A BULLETIN.

INDUSTRY REVIEW
INFORMATION NOTICE NO. 88-46 SUPP. 1

INFORMATION NOTICE IDENTIFIED: (BASED ON PARTIAL REVIEW OF SUPPLIER RECORDS)

- 18 UTILITIES
- 65 PURCHASE ORDERS
- 209 ITEMS PROCURED (APPROX. 200 CIRCUIT BREAKERS)

INDUSTRY SURVEY CONCLUSIONS:

- 31 PURCHASE ORDERS INVOLVED NUCLEAR FACILITIES
 - ALL PURCHASE ORDERS NON SAFETY RELATED
 - APPROX. 107 CIRCUIT BREAKERS FOR NSR SERVICE
 - 9 VERIFIED IN NSR HVAC/LIGHTING
 - 42 AWAITING VERIFICATION OF NSR SERVICE
 - 56 ON HOLD IN WAREHOUSE
 - 12 CIRCUIT BREAKERS UPGRADED TO SAFETY RELATED
 - 1 INSTALLED IN 1985 AND FAILED AFTER 3 MONTHS SERVICE
 - 3 FAILED UTILITY TESTING AS PART OF UPGRADE PROCESS
 - 8 ON HOLD IN WAREHOUSE

NPRDS RESULTS

1492 FAILURES REPORTED SINCE 1/1/84 INCLUDING GE, CUTLER HAMMER, ITE, GOULD AND SQUARE D. MOST OF THESE REPORTS PERTAINED TO MINOR MECHANICAL ADJUSTMENTS, DIRTY CONTACTS, LOOSE CONNECTIONS AND GENERAL MAINTENANCE. THESE FAILURE MODES WERE SCREENED FROM FURTHER REVIEW AS WERE FAILURES REQUIRING REPLACEMENT OF BREAKER SUBCOMPONENTS SUCH AS CONTACTS, TERMINAL BLOCKS, RELAYS, ETC. ALSO SCREENED WERE FAILURES IN ASSOCIATED CONTROL CIRCUITRY TO INDICATING LIGHTS, HANDSWITCHES, ETC.

64 OF THESE WERE CATASTROPHIC FAILURES REQUIRING REPLACEMENT OF THE ENTIRE BREAKER

APPROXIMATELY 1/2 OF THESE WERE IDENTIFIED AS AGE RELATED FAILURES

APPROXIMATELY 1/2 TO 2/3 WERE DISCOVERED DURING SHUTDOWN CONDITIONS THROUGH NORMAL MAINTENANCE

3 FAILED BREAKERS MATCHED MODELS CITED IN IN 88-46 (TWO GE MODEL AK-2 AND ONE ITE MODEL EF)

SUMMARY

NO DISCERNABLE TRENDS IN PROBLEMS REPORTED REGARDING ANY SPECIFIC MAKE OR MODEL

NOTE: TO LIMIT OUR FAILURE REPORT SAMPLE TO A MANAGABLE SIZE, WE ELECTED TO INCLUDE ONE OF EITHER GE OR WESTINGHOUSE IN OUR SORT, NOT BOTH. WE CHOSE GE.



NUCLEAR MANAGEMENT AND RESOURCES COUNCIL

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August 29, 1988