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August 3, 1979
AEP:NRC:00238

Donald C. Cook Nuclear Plant Unit Nos. 1 and 2
Docket Nos. 50-315 and 50-316
License Nos. DPR-58 and DPR-74

Mr. James G. Keppler, Regional Director
Office of Inspection and Enforcement
U. S. Nuclear Regulatory Commission
Region III
799 Roosevelt Avenue
Glen Ellyn, Illinois 60137

REFERENCE: IE BULLETIN NO. 79-14
SEISMIC ANALYSIS FOR "AS-BUILT"
SAFETY-RELATED PIPING SYSTEM
DATED JULY 2, 1979; REVISION 1 DATED JULY 20, 1979

Dear Mr. Keppler:

This letter and its attachments provide the information requested in Item 1 of IE Bulletin No. 79-14 Revision 1, as it applies to the Donald C. Cook Nuclear Plant Unit Nos. 1 and 2. The original version of the bulletin was received in our office on July 9, 1979, and Revision 1 was received on July 24, 1979.

The subject bulletin requires that AEPSC/I&MPCo. verify that the seismic analysis input information conforms to the actual "as-built" configurations of Seismic Category I (SC-I) safety-related piping 2.5 inches in diameter or greater and to SC-I safety-related piping, regardless of size, which was dynamically analyzed by computer. Those safety-related systems at the Cook Plant designed to SC-I standards are listed in Appendix 'B' to the Cook Plant FSAR, and are given in Attachment 1 to this letter.

All safety-related SC-I piping installed at the Donald C. Cook Nuclear Plant was subjected to continuous scrutiny by the independent Quality Control/Quality Assurance (QC/QA) Departments of I&MPCo./AEPSC and the piping installation contractor. In addition, numerous inspections were made by our "Third Party" insurance inspection agency, by the piping installation contractor's "Third Party" insurance inspection agency, by The Department of Labor of the State of Michigan, and by AEC/NRC Inspection

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and Enforcement personnel and their consultants. Permanent stringent controls were maintained over all phases of the erection of SC-I systems. These controls, as described in the applicable I&MPCo. and/or contractor procedures, were enforced and documented for the onsite receipt of materials, the verification of conformance of materials to the material specifications, the issuance and control of valves, the installation of process hangers/supports, all welding performed, and the verification of conformance to the appropriate design drawings/documents for SC-I safety-related piping systems.

All SC-I safety-related piping systems were inspected, reviewed, documented, and audited prior to their being released for pre-operational testing. Piping interferences with abutting structures were identified during pre-operational and/or hot functional testing and design modifications initiated. Exacting procedures were then in effect, and are still presently in effect, to assure that all modifications to the design of a particular system were recorded and that revised "as-built" documentation packets were compiled.

The procedures utilized for the functions described above provide a high degree of assurance that the "as-built" design documentation reflects the installed piping configuration, valve identifications and locations, and hanger/support designs and locations. The acceptability of these procedures has been verified during the numerous inspections/audits performed by AEC/NRC, and their consultants. Both the procedures themselves and the documentation packets containing "as-built" piping configurations were verified during those inspections/audits.

AEPSC/I&MPCo. believes that our QC/QA program, in conjunction with our procedures for review and documentation of design modifications, provides more than adequate justification for obtaining relief from the field inspection referenced in IE Bulletin No. 79-14. To further demonstrate that field inspection is not warranted, AEPSC/I&MPCo. will perform field inspections of two SC-I safety-related systems in each unit. The two systems to be inspected are Safety Injection (SI) and Component Cooling Water (CCW). These systems have been selected because the SI system required a large number of modifications over the original design and because the CCW system contains a very large quantity of piping, a wide range of pipe diameters, and is installed in a large number of Plant areas. This inspection will verify that all SC-I safety-related piping systems are adequately reflected by the "as-built" design documentation.

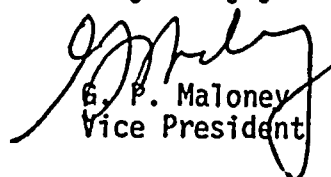
This approach is consistent with IE Bulletin No. 79-02, Field Inspection/Testing of Expansion Anchor Bolts, which allowed licensees to take credit for QC/QA programs which were in effect at the time of installation of the bolts. AEPSC/I&MPCo. feels that similar credit should also apply to the inspections required by IE Bulletin No. 79-14. In the unlikely event that the field inspection of the SI and CCW systems reveals significant discrepancies between the actual piping configurations and the "as-built" documentation packets, AEPSC/I&MPCo. will perform field inspections of all systems listed in Attachment 1 to this letter.

Procedures have been in effect to insure that the seismic analysis of a system did in fact correspond to the "as-built" condition. We are confident that our analyses adequately reflect such conditions. Recent inspections of the feedwater piping inside containment and the pressurizer surge line have served to strengthen this belief. Nevertheless, AEPSC/I&MPCo. will verify that the seismic analysis input information does in fact conform to the "as-built" piping configurations for all SC-I safety-related systems as addressed in the Bulletin. The results of this verification program will be forwarded to the Commission in accordance with the schedule set forth in the Bulletin.

As requested in Item No. 1 of the Bulletin, Attachment 2 to this letter contains a list of the design documents which were sources of input information for the analyses. A list is provided for each AEPSC Piping Analysis Problem. Please be advised that flow diagrams and arrangement drawings are included in these lists for reference only.

As the information contained herein is being submitted in response to a written request by the NRC, AEPSC interprets 10 CFR 170.22 as requiring that no fee accompany this submittal.

Very truly yours,


E. P. Maloney
Vice President

GRM/emc
Attachments

cc: V. Stello
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ATTACHMENT 2 TO AEP:NRC:00238

The following is a list and description of the documents used as input to the seismic analysis:

1. The Flow diagram is a controlled document which is used to identify the system being analyzed. Since it is a control document, it must go through a sign-out procedure prior to being changed. Pertinent information such as the pipe material specification and size is shown on the flow diagram.
2. The Layout drawing is also a controlled document which must go through the same sign-out procedure as the flow diagram prior to being changed. It is used to get the actual geometry of the piping system (i.e. actual length of piping, exact location of valves etc.). Layout drawings are done by an experienced designer.
3. The Isometrics are made from both flow diagrams and layout drawings and show actual pipe length, valve locations and pipe material specifications.
4. The Math model is a composite drawing of the entire system showing location of concentrated masses and boundary conditions of the system.
5. Pipe specification No. DCCPM104QCS indicates the pipe material and wall thickness, from which the weight per foot can be determined. It also shows the service conditions (i.e. pressure and temperature).
6. Insulation specification DCCPM450QCS indicates the type, thickness and weight per foot of insulation as a function of service temperature, which can be found in the piping specification.
7. The response spectrum curves are developed from the seismic analyses of the building. Appropriate floor response accelerations to which a given piping system is anchored, are considered as a part of loading condition for the stress analyses of the piping systems.

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ATTACHMENT 1 TO AEP:NRC:00238

DONALD C. COOK NUCLEAR PLANT
SEISMIC CATEGORY I* SAFETY-RELATED PIPING SYSTEMS

<u>ACRONYMS</u>	<u>SYSTEM</u>
RC	Reactor Coolant
RH	Residual Heat Removal
SI	Safety Injection
CTS	Containment Spray
CCW	Component Cooling Water
ESW	Essential Service Water
CS	Chemical Volume and Control* (a) RCP Seal Injection/Return (b) Normal Charging/Letdown
MS	Main Steam*
FW	Main* and Auxiliary Feedwater
FO	Emergency Diesel Generator Fuel Oil
CA	Emergency Diesel Generator Control Air
JW	Emergency Diesel Generator Jacket Water
LO	Emergency Diesel Generator Lube Oil

* Those systems marked with an asterisk (*) are not in their entirety
Seismic Category I.

