



SVP-98-335

October 26, 1998

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, D C 20555

Quad Cities Nuclear Power Station, Units 1 and 2
Facility Operating License Nos. DPR-29 and DPR-30
NRC Docket Nos. 50-254 and 50-265

Subject: **Response to NRC Assessment of Containment Overpressure
and Associated 10 CFR 50.59 Evaluation**

- References:
- (a) Letter from R. M. Pulsifer (USNRC) to O. D. Kingsley (ComEd), dated September 22, 1998, "Review of Quad Cities 10 CFR 50.59 Evaluation and Supporting Documentation Including GL 97-04 Response Relating to Adequate NPSH for ECCS Pumps and Use of Containment Overpressure."
 - (b) Letter from J. Hosmer (ComEd) to USNRC, dated January 5, 1998, "90 Day response to Generic Letter 97-04 - Braidwood Nuclear Power Station, Units 1 and 2, Byron Nuclear Power Station, Units 1 and 2, Dresden Nuclear Power Station, Units 2 and 3, LaSalle County Nuclear Power Station, Units 1 and 2, Quad Cities Nuclear Power Station, Units 1 and 2, and Zion Nuclear Power Station, Units 1 and 2."
 - (c) Letter from J. P. Dimmette, Jr. (ComEd), SVP-98-316, to USNRC, dated October 23, 1998, "Submittal of Technical Information concerning Containment Overpressure." APD
 - (d) Letter from R. M. Pulsifer (USNRC) to ComEd, dated July 9, 1998, "Summary of Meeting Concerning Quad Cities Use of Containment Overpressure." 1/1

9810300163 981026
PDR ADOCK 05000254
P PDR

Chang: NRC ADK

let's encl
1 1 w/o prep

The purpose of this letter is to provide the Commonwealth Edison (ComEd) Company 30-day response to the NRC assessment documented in Reference (a). Reference (a) was received on September 25, 1998, therefore this response is due to the NRC by October 26, 1998. Furthermore, Reference (a) requested that if an Unreviewed Safety Question (USQ) as defined in 10 CFR 50.59 is determined to exist, ComEd should inform the NRC in writing of our plan and schedule for resolution of the issue.

In addition, Reference (a) reiterated our commitment to complete the new containment overpressure and net positive suction head (NPSH) analyses, the resultant Updated Final Safety Analysis Report (UFSAR) revisions, and the associated 10 CFR 50.59 Safety Evaluation that ComEd committed to complete by September 30, 1998 during the June 19, 1998 meeting between NRC and ComEd representatives. Reference (a) also included a request to provide along with the analysis, the applicability study for using the Dresden Nuclear Power Station analysis for Quad Cities Nuclear Power Station, and the General Electric (GE) SHEX computer code benchmarking used in the analysis for the Quad Cities Nuclear Power Station as committed by ComEd representatives during the June 19, 1998 meeting. The Reference (a) letter requested that this information be submitted to the NRC by September 30, 1998. This requested information was subsequently submitted by Reference (c), which consisted of the short term containment overpressure response and NPSH analyses and the GE SHEX code benchmarking results. As discussed between Mr. R. M. Pulsifer, NRC, and Mr. R. M. Krich, ComEd, on September 30, 1998, the committed actions, reiterated above, were completed on September 30, 1998, for the short term (<600 seconds) containment overpressure response, and additional time was being taken to review the long-term analyses.

ComEd has completed analyses of both the short-term and long-term containment response and NPSH requirements following a Loss of Coolant Accident (LOCA). Based on these analyses, ComEd has determined that 3 psig of containment overpressure (COP) for the short-term (<600 seconds) is required to ensure Emergency Core Cooling System (ECCS) pump operability. This is consistent with the statement that a "few psi" of COP was acceptable for "about 8 hours" in the 1971 NRC Safety Evaluation Report (SER), supporting the granting of the Operating License for Quad Cities Nuclear Power Station, Units 1 and 2.

The statements regarding containment overpressure in the 1971 SER directly support the allowance of a few pounds of COP for the first 8-hours following the initiation of a LOCA to ensure acceptable ECCS performance. We consider that the statement, "a few psi is needed for about 8 hours following a design basis Loss-of-Coolant Accident," means that a small amount of containment overpressure is needed from initiation of the LOCA to about 8 hours later. Since new information from the original authors of the 1971 SER has not been identified, ComEd considers this to be a reasonable conclusion.

ComEd considers that the original SER approved COP use for the first 8 hours following a LOCA. However, ComEd's re-evaluation of the COP requirements now indicates that COP is required for a period greater than 24 hours, which is not consistent with the 1971 SER. ComEd's 10 CFR 50.59 Safety Evaluation has concluded that this increased dependence on COP constitutes a USQ; consequently, a request for a License Amendment pursuant to 10 CFR 50.90 will be submitted.

Based on the identification of a USQ concerning the incorporation of the long-term COP analyses into the Updated Final Safety Analysis Report (UFSAR), an operability evaluation has been performed. The results of this evaluation demonstrate that for this nonconforming condition, operability of the associated equipment is assured by the new COP analyses. The new analyses concluded that the available COP is greater than the COP required for pump NPSH for greater than 24 hours. Consequently, compensatory measures for this condition are not required.

Pursuant to 10 CFR 50.90, ComEd will submit a request for a License Amendment. This request for a License Amendment will address the long-term evaluation. While the identified USQ only applies to the long-term NPSH evaluation, ComEd will include the short-term COP evaluation to clarify the current licensing basis. This request for a License Amendment will also request NRC review and approval for higher short-term COP so as to reduce the reliance on core spray pump cavitation during the early stage of the post-LOCA containment conditions. Commensurate with the safety significance of the issue, this request for a License Amendment will be submitted to the NRC by January 29, 1999.

The short-term (<600 seconds) containment overpressure response analysis and NPSH analysis were previously provided in Reference (c). The short-term analyses did not involve a USQ.

In accordance with Reference (c), the long-term (>600 seconds) containment overpressure response analysis and NPSH analysis are provided in Attachments A and B to this letter. These analyses were performed by General Electric (GE) and ComEd, respectively.

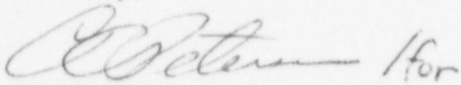
Attachment A contains GE proprietary information. Accordingly, we are requesting that this information be withheld from public disclosure in accordance with 10 CFR 2.790(a)(4). As required by 10 CFR 2.790(b)(1), an affidavit from GE is enclosed with Attachment A attesting to the proprietary needs for the document.

October 26, 1998

In response to Generic Letter 97-04, "Assurance of Sufficient Net Positive Suction Head for Emergency Core Cooling and Containment Heat Removal Pumps," ComEd provided information (Reference (b)) regarding the amount of short-term (<600 seconds) COP that is available for the ECCS pumps. The "available" COP (i.e., 9.5 psig) was conservatively based on a short-term containment response calculation performed for the Dresden Nuclear Power Station containment, which is similar to the Quad Cities Nuclear Power Station containment design. The amount of "required" short-term COP (i.e., 7.3 psig) was based on preventing ECCS pump cavitation for the first 240 seconds and conservatively used the peak suppression pool temperature at 10 minutes. As discussed in this letter, ComEd recently confirmed that only 3 psig of short-term COP is required to ensure ECCS pump operability, which is consistent with the licensing basis for Quad Cities Nuclear Power Station. Based on this, ComEd will issue a revised response to Generic Letter 97-04 by January 29, 1999. This updated response will address the pertinent issues raised in the NRC assessment in Reference (a) regarding the Quad Cities Nuclear Power Station response to the Generic Letter.

If there are any questions or comments concerning this letter, please refer them to Mr. Charles Peterson, Regulatory Assurance Manager, at (309) 654-2241, extension 3609.

Sincerely,



Joel P. Dimmette, Jr.
Site Vice President
Quad Cities Nuclear Power Station

- Attachments: A. GE Report and Affidavit, GE-NE-T2300750-00-02-RI,
DRF T23-00750, September, 1998, Quad Cities Nuclear Power
Station, Units 1 and 2, "Containment Analysis for Long-Term NPSH
Evaluation with ANS 5.1-1979+2 Sigma Decay Heat"
PROPRIETARY.
- B. ComEd Calculation No, QDC-1000-M-0535, Rev. 1, "Long-Term
RHR/Core Spray Pump NPSH Analysis - Design Basis LOCA"

cc: Regional Administrator - NRC Region III
NRC Senior Resident Inspector - Quad Cities Nuclear Power Station

ATTACHMENT A

SVP-98-335

GE Report and Affidavit, GE-NE-T2300750-00-02-RI,
DRF T23-00750, September, 1998, Quad Cities Nuclear Power Station, Units 1 and 2,
"Containment Analysis for Long-Term NPSH Evaluation with ANS 5.1-1979+2 Sigma
Decay Heat"

**Attachment A contains General Electric (GE) Company
proprietary information for which withholding from public
disclosure is requested.**

General Electric Company

AFFIDAVIT

I, **David J. Robare**, being duly sworn, depose and state as follows:

- (1) I am Technical Account Manager, Technical Projects, General Electric Company ("GE") and have been delegated the function of reviewing the information described in paragraph (2) which is sought to be withheld, and have been authorized to apply for its withholding.
- (2) The information sought to be withheld is contained in GE proprietary reports GE-NE-T2300750-00-02-R1, *Quad Cities Nuclear Power Station Units 1 and 2, Containment Analysis for Long-Term NPSH Evaluation with ANS 5.1-1979 + 2 Sigma Decay Heat*, Class III (GE Company Proprietary Information), dated September, 1998, and GE-NE-T2300750-00-03, *Quad Cities Nuclear Power Station Units 1 and 2, Containment Analysis for Short-Term NPSH Evaluation with ANS 5.1-1979 + 2 Sigma Decay Heat*, Class III (GE Company Proprietary Information), dated September, 1998. The specific proprietary information is delineated by marginal bars within the report.
- (3) In making this application for withholding of proprietary information of which it is the owner, GE relies upon the exemption from disclosure set forth in the Freedom of Information Act ("FOIA"), 5 USC Sec. 552(b)(4), and the Trade Secrets Act, 18 USC Sec. 1905, and NRC regulations 10 CFR 9.17(a)(4), 2.790(a)(4), and 2.790(d)(1) for "trade secrets and commercial or financial information obtained from a person and privileged or confidential" (Exemption 4). The material for which exemption from disclosure is here sought is all "confidential commercial information", and some portions also qualify under the narrower definition of "trade secret", within the meanings assigned to those terms for purposes of FOIA Exemption 4 in, respectively, Critical Mass Energy Project v. Nuclear Regulatory Commission, 975F2d871 (DC Cir. 1992), and Public Citizen Health Research Group v. FDA, 704F2d1280 (DC Cir. 1983).
- (4) Some examples of categories of information which fit into the definition of proprietary information are:
 - a. Information that discloses a process, method, or apparatus, including supporting data and analyses, where prevention of its use by General Electric's competitors without license from General Electric constitutes a competitive economic advantage over other companies;

- b. Information which, if used by a competitor, would reduce his expenditure of resources or improve his competitive position in the design, manufacture, shipment, installation, assurance of quality, or licensing of a similar product;
- c. Information which reveals cost or price information, production capacities, budget levels, or commercial strategies of General Electric, its customers, or its suppliers;
- d. Information which reveals aspects of past, present, or future General Electric customer-funded development plans and programs, of potential commercial value to General Electric;
- e. Information which discloses patentable subject matter for which it may be desirable to obtain patent protection.

The information sought to be withheld is considered to be proprietary for the reasons set forth in both paragraphs (4)a. and (4)b., above.

- (5) The information sought to be withheld is being submitted to NRC in confidence. The information is of a sort customarily held in confidence by GE, and is in fact so held. The information sought to be withheld has, to the best of my knowledge and belief, consistently been held in confidence by GE, no public disclosure has been made, and it is not available in public sources. All disclosures to third parties including any required transmittals to NRC, have been made, or must be made, pursuant to regulatory provisions or proprietary agreements which provide for maintenance of the information in confidence. Its initial designation as proprietary information, and the subsequent steps taken to prevent its unauthorized disclosure, are as set forth in paragraphs (6) and (7) following.
- (6) Initial approval of proprietary treatment of a document is made by the manager of the originating component, the person most likely to be acquainted with the value and sensitivity of the information in relation to industry knowledge. Access to such documents within GE is limited on a "need to know" basis.
- (7) The procedure for approval of external release of such a document typically requires review by the staff manager, project manager, principal scientist or other equivalent authority, by the manager of the cognizant marketing function (or his delegate), and by the Legal Operation, for technical content, competitive effect, and determination of the accuracy of the proprietary designation. Disclosures outside GE are limited to regulatory bodies, customers, and potential customers, and their agents, suppliers, and licensees, and others with a legitimate need for the information, and then only in accordance with appropriate regulatory provisions or proprietary agreements.
- (8) The information identified in paragraph (2), above, is classified as proprietary because it contains detailed design bases and methods and processes regarding the

use of analytical models, including computer codes, which GE has developed or modified, and applied to perform evaluations of containment pressurization and heat transfer capability for loss-of-coolant accidents for the BWR. This detailed level of information normally only is available for GE internal use, is not supplied even to our customers, and only is available for audit by customers and the NRC. This information shows in specific detail the processes, codes and methods employed to perform the evaluations.

The development and modification of this information and models for these BWR analysis computer codes was achieved at a significant cost, on the order of several hundred thousand dollars, to GE.

The development of the supporting processes, was at a significant additional cost to GE, in excess of a million dollars, over and above the large cost of developing the underlying individual proprietary report information.

- (9) Public disclosure of the information sought to be withheld is likely to cause substantial harm to GE's competitive position and foreclose or reduce the availability of profit-making opportunities. The information is part of GE's comprehensive BWR safety and technology base, and its commercial value extends beyond the original development cost. The value of the technology base goes beyond the extensive physical database and analytical methodology and includes development of the expertise to determine and apply the appropriate evaluation process. In addition, the technology base includes the value derived from providing analyses done with NRC-approved methods.

The research, development, engineering and analytical review costs comprise a substantial investment of time and money by GE.

The precise value of the expertise to devise an evaluation process and apply the correct analytical methodology is difficult to quantify, but it clearly is substantial.

GE's competitive advantage will be lost if its competitors are able to use the results of the GE experience to normalize or verify their own process or if they are able to claim an equivalent understanding by demonstrating that they can arrive at the same or similar conclusions.

The value of this information to GE would be lost if the information were disclosed to the public. Making such information available to competitors without their having been required to undertake a similar expenditure of resources would unfairly provide competitors with a windfall, and deprive GE of the opportunity to exercise its competitive advantage to seek an adequate return on its large investment in developing these very valuable analytical tools.

STATE OF CALIFORNIA)
)
COUNTY OF SANTA CLARA)

ss:

David J. Robare, being duly sworn, deposes and says:

That he has read the foregoing affidavit and the matters stated therein are true and correct to the best of his knowledge, information, and belief.

Executed at San Jose, California, this 30TH day of SEPTEMBER 1998.

David J. Robare
David J. Robare
General Electric Company

Subscribed and sworn before me this 30TH day of SEPTEMBER 1998.

Anna Hanlin
Notary Public, State of California

