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SEP 9 1980

Docket No.: 50-410

Niagara Mohawk Power Corporation
ATTN: Mr. Gerald K. Rhode
Vice President
System Project Manager
300 Erie Boulevard West
Syracuse, New York 13202

Dear Mr. Rhode:

SUBJECT: REQUEST FOR ADDITIONAL INFORMATION REGARDING THE DYWIDAG THREADBAR SYSTEM

As a result of our review of your submittal, dated June 17, 1980, regarding the DYWIDAG Threadbar System, proposed to be used in the Nine Mile Point Nuclear Station, Unit 2. we find a need for additional information. Our request for this additional information is contained in the enclosure to this letter.

The enclosed questions, in draft form, served as the meeting agenda for the meeting held with your representatives on August 14, 1980 in Bethesda, Maryland. This attached request for additional information reflects in the discussion held at that meeting.

If you have any questions regarding our request for additional information, contact Kenneth L. Kiper, Project Manager, at 301/492-7318.

Sincerely,
Original signed by
Robert L. Tedesco

Robert L. Tedesco, Assistant Director
for Licensing
Division of Licensing

Enclosure:
Nine Mile Point Nuclear Station,
Unit 2, Request for Additional
Information

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OFFICE	DL:LB#1	DL:LB#1	DL:AD/L			
SURNAME	KKiper/ls MDLynch	BJYoungblood	RLTedesco			
DATE	8/30/80	8/6/80	8/8/80			

ENCLOSURE

NINE MILE POINT NUCLEAR STATION, UNIT 2

DOCKET NO. 50-410

DYWIDAG THREADBAR SYSTEM

1. Provide the following information regarding the test data which you submitted by letter dated June 17, 1980.

   a) The total number of specimens tested for each bar size. Discuss whether there were rejections of any test results and indicate the reasons for the rejections.

   b) The test data submitted applies to the splices which use hex nuts. Discuss the other two types of splices.

   c) From the test data submitted, we observed that the ultimate strength of the spliced specimen is generally less than the unspliced specimen. Discuss the reason for this behavior, the splice-bar interaction effects, and the implications and interpretations of such behavior.

   d) We also noticed that spliced specimens demonstrate a softening effect at the yield level when compared to unspliced specimens. Discuss the reasons, interpretation, and implications of such behavior.

   e) Provide a description and interpretation of the failure mode of each specimen.

   f) Provide a statistical description of the test data, such as confidence levels for ultimate strength and the amount of data scatter.

2. We have found that information regarding the following parameters and their variability is required in evaluating the performance of the DywiDag system. Discuss the following items and supporting test data:

   a) The effect on performance due to dimensional tolerances in the splice couplers, rebars, and nuts, including those in threading.

   b) The effect on performance due to tolerances in the physical properties and the chemical composition of the material rebars, couplers, and nuts.

   c) The effect on performance due to variations in field conditions during installation, such as the alignment of rebars to be spliced, temperature and humidity.

   d) The effect on performance due to low (or high) service temperature on materials of rebars, couplers and nuts. For the purpose of evaluation and testing, the low temperature may be taken to be -20°F and the high temperature, 150°F.

e) The effect on performance due to a split in the rebar.

3. According to information given with your letter, dated June 17, 1980, the DywiDag System has been used in the construction of nuclear power plants in several foreign countries. We require the following information in order to evaluate the actual performance record of the system.

   a) Provide details as to the actual locations at which splice bars are used in the above cited plants; the types of loads and stress levels these bars are subjected to and their erection specifications; any observed failure of these splices and their causes. Also indicate any deterioration due to corrosion or environmental effects, such as temperature and moisture.

   b) Provide construction and installation records, such as amounts of discards, continuing performance test results and staggered or unstaggered splices. Also, provide the QA/QC procedures observed during erection.

   c) The DywiDag system is presently used in Germany on Class 1 nuclear structures. Discuss how this system meets the German standard or criteria for splicing. How does the German standard compare to the American standard?

   d) Discuss the technical merits and advantages for using this sytem versus other approved methods.

4. Discuss the planned uses of the DywiDag system on Nine Mile Point, Unit 2. Indicate the expected stress levels, the types of loads, and the configuration (staggered or unstaggered). Compare these uses with previous uses in foreign plants.

5. Tests were performed by Ontario Hydro comparing the DywiDag system with three other splice systems. If available, provide the results of these tests.

6. The staff is aware of the use of this system by two U. S. nuclear plants, ANO-1 and Millstone, neither of which involved safety structures. Are you aware of the specific applications? If so, provide a description of its use and any available performance history on these plants.

7. In conjunction with code case N-186, provide QA/QC related information, such as training of splicers, qualification of splicers, and inspection of the rebar, coupler, and the finished splice.

Niagara Mohawk Power Corporation

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