

NRC 2001-065

10 CFR 50.55a

September 19, 2001

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U. S. Nuclear Regulatory Commission  
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Ladies/Gentlemen:

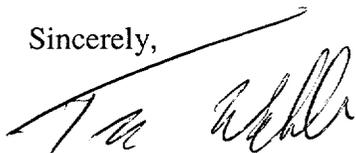
DOCKETS: 50-266 AND 50-301  
ASME SECTION XI RELIEF REQUEST  
UNIT 2 RR-2-31  
POINT BEACH NUCLEAR PLANT, UNIT 2

In accordance with 10 CFR 50.55a(a)(3)(i), Point Beach Nuclear Plant (PBNP) requests relief from Section XI Code Table IWB-2500-1, Examination Category B-G-1, Item B6.30 requirements. The current requirements provide for a surface and volumetric examination of the reactor vessel studs. PBNP requests relief from performing the surface examinations and will perform only the volumetric examinations of the studs. Attached relief request RR-2-31 provides the basis for this request. The requested relief will be implemented for the remainder of the Third 10-Year Interval, which will end June 30, 2002.

PBNP is requesting approval of this relief request prior to the start of the next Unit 2 refueling outage, currently scheduled to begin on March 30, 2002. The relief request is applicable to the 32 reactor vessel studs requiring examination during the remainder of the Third 10-Year Interval.

Please contact us if there are questions regarding this relief request.

Sincerely,



Thomas J. Webb  
Licensing Director

FAF/tyf

Attachment

cc: NRC Resident Inspector  
NRC Regional Administrator  
NRC Project Manager  
PSCW

NUCLEAR MANAGEMENT COMPANY, LLC  
POINT BEACH NUCLEAR PLANT, UNIT 2  
RELIEF REQUEST RR-2-31

Pursuant to 10 CFR 50.55a(a)(3)(i), Point Beach Nuclear Plant (PBNP) requests relief from the requirements of Examination Category B-G-1, Item B6.30, as specified in the 1986 Edition of ASME Section XI.

Identification

Point Beach Nuclear Plant, Unit 2  
Reactor Pressure Vessel Closure Head studs

Examination Requirements

ASME Section XI, 1986 Edition, Examination Category B-G-1, "Pressure Retaining Bolting, Greater than 2 in. in Diameter," Item B6.30, "Reactor vessel Closure Studs, when removed." A surface and volumetric examination shall be performed.

Relief Requested

PBNP requests relief from performing the surface examination on the reactor vessel closure studs when they are removed.

Basis for Relief

Performance of surface examinations on reactor vessel closure studs is a task that requires significant resources. In order to perform the surface examination, a substantial amount of handling of the studs is necessary. First, they must be removed from the storage racks with the nut and washer being disassembled from the stud. Since the entire stud, nut and washer assembly weighs approximately 500 pounds, there is a personnel safety concern during stud movement. Second, maintenance personnel must remove all traces of lubricant. After the cleaning process is complete, the studs are placed horizontally for the surface examination, rotated during the examinations so every part of the stud can be examined, and then picked up again for cleaning and reapplication of the lubricant. They are then moved to the stud racks for storage until they are reinstalled in the reactor vessel head. If a fluorescent magnetic particle method is used, a dark room must be provided. The dark room is constantly being opened and closed as the studs are examined because the studs must be moved in and out of the darkroom. There is a Code requirement for personnel performing fluorescent examinations to be in the darkened area for five minutes before the start of an examination to allow their eyes to adjust to the darkened area. This adds to the

time required to complete the examinations. Examination time typically takes two to three days for 16 of the 48 studs typically examined during each period.

Lubricant must then be thoroughly cleaned from the closure studs. The lubricant is a type that is designed to stay pliable under the harsh conditions the studs encounter while installed in the reactor vessel when the unit is at power. This results in special equipment being needed to remove the lubricant, as well as extensive resources to perform the task. At PBNP, this activity is performed inside the containment building, thus exposing workers to additional radiation exposure. The cleaning process can take from one to two weeks for two personnel.

The cleaning process at PBNP uses flammable substances in small quantities. This is the best method for getting the studs clean enough to perform the required examinations. This can be considered a safety hazard, even though adequate ventilation and safety precautions are taken during cleaning.

The best method for performing the examinations is by using a wet magnetic particle method. This method contributes to the waste cycle as the leftover magnetic particle material may be mixed with small amounts of radioactive material, and must be properly disposed. This method requires re-cleaning the studs before the lubricant can be reapplied.

The process required to perform the surface examination introduces the burden of increased risk of personnel injury, personnel radiation exposure, and damage to the studs during handling, without a commensurate increase in safety.

### Alternative Examinations

PBNP will perform a volumetric examination of the reactor vessel closure studs utilizing personnel and procedures qualified in accordance with the Performance Demonstration Initiative (PDI), and Supplement 8 of Appendix VIII of the 1995 Edition of Section XI with Addenda through 1996. This alternative matches the proposed rule change to 10 CFR 50.55a dated August 3, 2001, that adopts ASME Section XI 1998 Edition with Addenda through 2000, and would be in compliance with all current rules for volumetric examination.

### Justification for Relief

The August 3, 2001, proposed rule change to 10 CFR 50.55a endorses the 1998 Edition with Addenda through 2000 of Section XI. Examination Category B-G-1, Item No. B6.30 is still included, however, the examination method requirements have been changed. In the proposed rule change, either a surface or volumetric examination is required, not both methods.

By performing only the volumetric examination method, there is a significant reduction in the handling of the stud, nut and washer, thus reducing the possible damage that is often encountered during performance of these activities. The closure studs may remain in the storage rack in an assembled condition. The only part of the closure stud needing to be cleaned is the top end surface. This area can be cleaned relatively quickly and does not need the level of cleanliness required to conduct a magnetic particle examination.

The cleaning requirements after the examinations are reduced. The couplants used for the volumetric examination are easily removed by water, or, if left in place, would not harm the stud or pose a problem if the couplant should get inside the reactor vessel. Couplants used for Section XI examinations are allowed unrestricted use on all piping, bolting and vessels. However, it is the PBNP practice to thoroughly remove any couplant materials left after every examination.

Sixteen of the 48 studs have already been examined using surface techniques at PBNP Unit 2 for the Third 10-Year Interval. The surface examinations of these studs have revealed only man-made indications, which were either scratches or dents, probably caused by handling. The surface examinations have not found any other type of indication.

By applying the volumetric examination technique and using the rules established in Appendix VIII and the PDI personnel training requirements, the proposed alternative would provide an acceptable level of quality and safety.

### Implementation Schedule

The proposed alternative will be implemented for the remainder of the third 10-year inservice inspection interval.