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NRC-93-108

September 30, 1993

Document Control Desk  
U. S. NUCLEAR REGULATORY COMMISSION  
Mail Station P1-137  
Washington, DC 20555

Gentlemen:

DOCKETS 50-266 AND 50-301  
RESPONSE TO GENERIC LETTER 89-10, SUPPLEMENT 5,  
"INACCURACY OF MOTOR-OPERATED VALVE DIAGNOSTIC EQUIPMENT"  
POINT BEACH NUCLEAR PLANT, UNITS 1 AND 2

On July 2, 1993, Wisconsin Electric Power Company received NRC Generic Letter 89-10, Supplement 5. This supplement details the NRC's concerns regarding the reliability of data provided by motor-operated valve (MOV) diagnostic equipment. Most diagnostic equipment measures either spring pack displacement or valve yoke strain in order to estimate stem thrust. Recently, the MOV User's Group, as well as several manufacturers of MOV diagnostic equipment, has informed the NRC that the information obtained from the diagnostic equipment may not meet all of the vendor's accuracy claims.

In order to address these concerns, the NRC has requested that all licensees provide a description of the MOV diagnostic equipment they use, as well as provide a summary of actions taken or planned, that will address the concerns on MOV test equipment accuracy contained within the generic letter.

The diagnostic system used at Point Beach Nuclear Plant was developed in-house by plant engineers. The developed system has exhibited highly repeatable results. The diagnostic equipment used at Point Beach, as part of this system, is as follows:

- Yokogawa 3655E multichannel analyzer
- Sensotec load cell transducer
- Lebow load cells
- Midori linear motion potentiometer
- Bergen-Patterson snubber test rig used to calibrate the load cells
- Fluke ammeter

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In addition to the equipment used in the diagnostic testing, the following system controls are currently in place to ensure the accuracy of the measurements obtained:

- Repeatability of operator performance among identical operators is enhanced by using a standard diagnostic sensor setup for each individual valve.
- Standardized use of B-7 studs for attachment of the valve operator to the valve yoke.
- Calibrations of the multichannel analyzer, load cell transducer, load cells, snubber test rig, and the ammeter are performed annually.
- Linear motion potentiometers are calibrated each time the batteries are replaced in the associated signal driver units.
- Load sensing studs are replaced every two years. These studs are used in the measurement of the spring pack thrust.
- Load cells are matched physically and electrically to ensure that they possess the appropriate characteristics for the operator being tested.
- Differential measurements are used in the determination of stem thrust and spring pack displacement. Using differential measurements reduces the amount of error that could be induced between successive measurements.
- Spring pack spring rates are determined with the spring pack installed in the operator. This arrangement verifies free motion of the spring pack on the worm shaft spline.

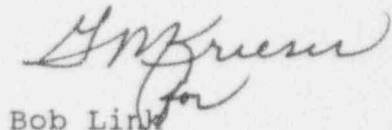
In response to this generic letter, an evaluation was performed to quantify the errors associated with the calibration and use of the diagnostic equipment. These equipment errors have already been incorporated in the operating margins used in the Point Beach MOV program.

In conclusion, we believe that the diagnostic equipment used in support of the Point Beach MOV program provide the accurate information necessary to confirm the proper size, or establish settings, for MOVs within the scope of GL 89-10. Therefore, no equipment modifications are anticipated in response to this generic letter.

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Please contact us if there are any questions.

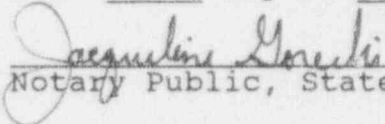
Sincerely,



Bob Link  
Vice President  
Nuclear Power

Copies to NRC Regional Administrator, Region III  
NRC Resident Inspector

Subscribed and sworn to before me  
this 30<sup>th</sup> day of September, 1993.



Notary Public, State of Wisconsin

My Commission expires 10-27-98.