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Dockets Nos. 50-266
and 50-301

Wisconsin Electric Power Company
Wisconsin Michigan Power Company
ATTN: Mr. Sol Burstein
Executive Vice President
231 West Michigan Street
Milwaukee, Wisconsin 53201

Gentlemen:

The Commission has issued the enclosed Amendments Nos. 18 and 23 to Facility Operating Licenses Nos. DPR-24 and DPR-27 for the Point Beach Nuclear Plant, Units Nos. 1 and 2. The amendments consist of changes to the Technical Specifications and are in accordance with your application dated May 13, 1976.

The amendment consists of changes in the Technical Specifications that will add surveillance requirements and will place a limit on the maximum weight of the spent fuel shipping cask that may be used.

Copies of the related Safety Evaluation and the Federal Register Notice also are enclosed.

Sincerely,

George Lear, Chief
Operating Reactors Branch #3
Division of Reactor Licensing

Enclosures:
1. Amendment No. 18 to License DPR-24
2. Amendment No. 23 to License DPR-27
3. Safety Evaluation
4. Federal Register Notice

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Mr. Arthur M. Fish
Document Department
University of Wisconsin -
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Mr. Norman Clap, Chairman
Public Service Commission
of Wisconsin
Hill Farms State Office Building
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UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

WISCONSIN ELECTRIC POWER COMPANY
WISCONSIN MICHIGAN POWER COMPANY

DOCKET NO. 50-266

POINT BEACH NUCLEAR PLANT, UNIT NO. 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 18
License No. DPR-24

1. The Nuclear Regulatory Commission (the Commission) has found that:

   A. The application for amendment by Wisconsin Electric Power Company and Wisconsin Michigan Power Company (the licensees) dated May 13, 1976, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations set forth in 10 CFR Chapter I;

   B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;

   C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations; and

   D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public.

   E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.

2. Accordingly, the license is amended by a change to the Technical Specifications as indicated in the attachment to this license amendment.

3. This license amendment is effective as of the date of its issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

George Lear, Chief
Operating Reactors Branch #3
Division of Operating Reactors

Attachment:
Changes to the
Technical Specifications

Date of Issuance: July 6, 1976

ATTACHMENT TO LICENSE AMENDMENT NO. 18

TO THE TECHNICAL SPECIFICATIONS

FACILITY OPERATING LICENSE NO. DPR-24

DOCKET NO. 50-266

Add pages 15.4.14-1 and 15.4.14-2.

15.4.14 SURVEILLANCE OF AUXILIARY BUILDING CRANE

Applicability:

Applies to surveillance requirements for the auxiliary building crane before and during handling of the spent fuel shipping casks.

Objective:

To verify that the crane bridge and trolley interlocks to prevent movement over the south spent fuel pool are operational and to specify the maximum weight spent fuel shipping cask allowable.

Specification:

1. The five auxiliary building crane bridge and trolley positive acting limit switches, which prevent motion of the main crane hook over the south spent fuel pool, shall be demonstrated to be operable within one week prior to spent fuel shipping cask movement and at least once per week thereafter during spent fuel shipping cask movement operations.
2. The maximum allowable spent fuel shipping cask weight shall be limited to 52,500 pounds.

Basis:

In order to prevent damage to spent fuel assemblies stored in the south spent fuel pool in the event of a postulated dropped cask incident, positive acting limit switches have been mounted on the bridge to restrict the auxiliary building crane movement. The switches are located to prevent cask movements over the south spent fuel pool.

An initiating signal from the limit switches will shut off drive power to the crane and set the brakes. The controls are such that the trolley can be moved only in the north direction after the limit switches have operated and the switches will automatically reset upon reverse movement.

The specified maximum weight of the spent fuel shipping cask is based upon the heaviest spent fuel shipping cask presently expected to be used at the Point Beach Nuclear Plant and is consistent with the analyses done for the potential effects upon spent fuel stored in the south spent fuel pool in the event of a postulated cask drop in the north spent fuel pool.

Reference:

(1) FFDSAR Appendix F

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

WISCONSIN ELECTRIC POWER COMPANY
WISCONSIN MICHIGAN POWER COMPANY

DOCKET NO. 50-301

POINT BEACH NUCLEAR PLANT, UNIT NO. 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 23
License No. DPR-27

1. The Nuclear Regulatory Commission (the Commission) has found that:

   A. The application for amendment by Wisconsin Electric Power Company and Wisconsin Michigan Power Company (the licensees) dated May 13, 1976, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations set forth in 10 CFR Chapter I;

   B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;

   C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations; and

   D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public.

   E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.

2. Accordingly, the license is amended by a change to the Technical Specifications as indicated in the attachment to this license amendment.

3. This license amendment is effective as of the date of its issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

George Lear, Chief
Operating Reactors Branch #3
Division of Operating Reactors

Attachment:
Changes to the
Technical Specifications

Date of Issuance: July 6, 1976

ATTACHMENT TO LICENSE AMENDMENT NO. 23

TO THE TECHNICAL SPECIFICATIONS

FACILITY OPERATING LICENSE NO. DPR-27

DOCKET NO. 50-301

Add pages 15.4.14-1 and 15.4.14-2.

15.4.14 SURVEILLANCE OF AUXILIARY BUILDING CRANE

Applicability:

Applies to surveillance requirements for the auxiliary building crane before and during handling of the spent fuel shipping casks.

Objective:

To verify that the crane bridge and trolley interlocks to prevent movement over the south spent fuel pool are operational and to specify the maximum weight spent fuel shipping cask allowable.

Specification:

1. The five auxiliary building crane bridge and trolley positive acting limit switches, which prevent motion of the main crane hook over the south spent fuel pool, shall be demonstrated to be operable within one week prior to spent fuel shipping cask movement and at least once per week thereafter during spent fuel shipping cask movement operations.
2. The maximum allowable spent fuel shipping cask weight shall be limited to 52,500 pounds.

Basis:

In order to prevent damage to spent fuel assemblies stored in the south spent fuel pool in the event of a postulated dropped cask incident, positive acting limit switches have been mounted on the bridge to restrict the auxiliary building crane movement. The switches are located to prevent cask movements over the south spent fuel pool.

An initiating signal from the limit switches will shut off drive power to the crane and set the brakes. The controls are such that the trolley can be moved only in the north direction after the limit switches have operated and the switches will automatically reset upon reverse movement.

The specified maximum weight of the spent fuel shipping cask is based upon the heaviest spent fuel shipping cask presently expected to be used at the Point Beach Nuclear Plant and is consistent with the analyses done for the potential effects upon spent fuel stored in the south spent fuel pool in the event of a postulated cask drop in the north spent fuel pool.

Reference:

(1) FFDSAR Appendix F

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

SUPPORTING AMENDMENTS NOS. 18 AND 23 TO LICENSES DPR-24 AND 27

WISCONSIN ELECTRIC POWER COMPANY

POINT BEACH NUCLEAR PLANT, UNITS NOS. 1 AND 2

DOCKETS NOS. 50-266/301

Introduction

On February 27, 1974, we requested Wisconsin Electric Power Company (WEPCO) to provide us with analyses and other relevant information needed to determine the possible damage in the event of a spent fuel cask drop caused by a system failure at Point Beach, Units Nos. 1 and 2. We also asked the licensee to consider appropriate design or procedural modifications to reduce the probability of occurrence of a cask drop accident. WEPCO responded to our request by letters dated May 21, 1974, May 15 and October 2, 1975, and February 26, 1976. Also, per our request of April 15, 1976, WEPCO submitted proposed changes to the Technical Specifications on May 13, 1976 to (1) add surveillance requirements for the limit switches associated with the auxiliary building crane trolley and bridge motions, and (2) establish the maximum weight of the spent fuel shipping cask that may be used.

Discussion

The spent fuel storage facility at the Point Beach Nuclear Plant is shared by both Units Nos. 1 and 2. The spent fuel pool is constructed of reinforced concrete and is a seismic Category I structure. The entire interior basin face is lined with stainless steel plate. The pool itself is divided into two parts (north and south) by an internal dividing wall. A "notch" is provided in the divider wall to facilitate the transfer of spent fuel assemblies between the north and south pools. At its lowest point the divider wall "notch" is approximately three feet above the top of the stored spent fuel. The north portion of the spent fuel pool is reserved for the loading of the spent fuel cask, while the south pool is used to store fuel. There are some spent fuel storage racks located in the north pool but they are only used, as needed, to accommodate the temporary unloading of an entire reactor core. No spent fuel cask handling is undertaken when fuel is temporarily stored in the north pool. Ordinarily, spent fuel that is routinely discharged from the core during refueling is only stored in the south portion of the spent fuel pool.

The main hoist of the auxiliary building crane is used to lift the spent fuel shipping cask from the transportation vehicle to the fuel loading area in the north spent fuel pool and back to the transportation vehicle. The auxiliary building crane is of the electric overhead travelling bridge, single trolley type.

Our evaluation of WEPCO's analysis of postulated spent fuel cask drop accidents at Point Beach Units Nos. 1 and 2 and associated design changes and proposed Technical Specifications follows.

Evaluation

Our inquiry of February 27, 1974 and request of April 15, 1976 were prompted by several specific areas of concern which have been resolved as follows:

1. Integrity of spent fuel storage pool

The licensee has analyzed the effects of dropping or tipping the NAC-1/NFS-4 fuel shipping cask (25 tons loaded) at various locations in the north pool. The cases analyzed involved several drops at various locations in the north pool including a direct vertical drop onto the divider wall "notch", a lateral impact on the divider wall, and a cask overturning while sitting on the pool floor. These analyses indicated that failure of the structure could occur at the divider wall "notch" and at a location in the pool floor slab including the cask loading area. Analyses of drops at other locations showed that the structure would not fail.

To preclude the possibility of the cask dropping on the divider wall "notch", the licensee has proposed installing limit switches that will prevent the crane main hoist from travelling near the "notch". This proposed modification will be evaluated below in item 2. For the case of a cask drop on the north pool floor slab at a distance away from the divider wall, the slab would be expected to fail with attendant perforation of the stainless steel liner. But, the licensee has concluded, and we agree, that the integrity of the south pool (which would contain the spent fuel) would be maintained. With the failure of the north pool slab and perforation of the pool liner some outleakage of water would be expected. However, the rate of outleakage is expected to be small because (1) the floor slab is over five feet thick and would restrict leakage through cracks in the concrete, and (2) the floor is seven feet below grade in the red clay Niagara Dolomite overburden, which would also tend to limit the leakage rate.

Nevertheless, the outleakage could lead to a decrease in pool water inventory. To compensate any inventory loss, the licensee has indicated that various sources of makeup water would be available: treated water at several hundred gallons per minute for the short term, and untreated

water at several thousand gallons per minute for the long term. In the unlikely event that these sources could not be effected or were not adequate to keep up with the leak rate, the pool inventory would begin to decrease. As the level of water decreased in the north pool the south pool level would also decrease, since the pools communicate through the divider wall "notch". If the level continued to decrease, eventually it would drop to the level of the divider wall "notch" in both pools. At that point the water level in the south pool would remain at that level (about 3 ft. above the top of the fuel) while the north pool continued to drain. The licensee has determined that the direct radiation level at the top of the pool, from the fuel stored in the south pool, would be 690 Rem/hr.

To preclude this possibility, the licensee has proposed to construct a barrier that could be installed in the divider wall "notch". The barrier would be available for prompt installation in the "notch" in the event of a cask drop accident that resulted in an uncontrollable loss of water level in the spent fuel storage pool. The barrier would be designed to maintain a level of ten feet of water shielding over the spent fuel in the south pool.

We have reviewed the licensees calculations of the resultant radiation levels at the top of the pool with ten feet of water shielding over the spent fuel. Based on our review, we have concluded that the calculated value of 29mr/hr is acceptable. Moreover, in consideration of (1) the fact that no spent fuel cask drop could violate the integrity of the south pool where fuel is stored, (2) the sources of makeup water available, and (3) the availability of a barrier to maintain an adequate water level over the spent fuel in the south pool, we have concluded that relative to fuel pool integrity, the results of a cask drop accident are acceptable.

2. Integrity of the spent fuel

As stated earlier, no fuel is stored in the north pool during spent fuel cask handling operations. During these operations, all spent fuel is stored in the south pool. The licensee has shown by analysis that if the cask is handled over the north pool at a sufficient distance from the divider wall, a postulated cask drop (1) could not result in the tumbling of the cask into the south pool, and (2) could not result in any damage to the south pool from impacts in the north pool.

To ensure that the cask is handled properly, the licensee has instituted operational procedures to prohibit cask travel over or near the south pool. In addition, the licensee has proposed the installation of limit

switches on the crane trolley and bridge motions to ensure that the cask is never close enough to the divider wall to allow it to tumble over into the south pool, or to fall directly onto the divider wall "notch".

Based on our review, we have concluded that this modification, coupled with the operational procedures will preclude damage to spent fuel stored in the south pool; and therefore, is acceptable.

Furthermore, per our April 15, 1976 request, WEPCO proposed a new Technical Specification (Technical Specification 15.4.14.1) that would add surveillance requirements for the limit switches associated with the auxiliary building crane trolley and bridge motions. We have concluded that the proposed Technical Specification would provide additional assurance that the limit switches would remain operable during cask handling operations; and thus, is acceptable.

3. Integrity of critical systems and equipment

The licensee has provided a listing of equipment that the spent fuel cask would pass over in moving from the transportation vehicle to the cask loading area in the north pool. The licensee has determined, and we agree, that damage or destruction of any or all of this equipment by a postulated cask drop accident would not cause the loss of or jeopardize the integrity of systems or equipment important to safety. Therefore, relative to the integrity of critical systems and equipment, the consequences of a cask drop accident are acceptable.

4. Design of the crane and cask handling equipment

The licensee has provided a description of the auxiliary building crane that is used to lift the spent fuel cask. It is an electric overhead travelling bridge, single trolley type. The main hoist, which would be used to lift the 25 ton spent fuel shipping cask, is rated at 130 tons. The licensee has indicated that the design includes a minimum factor of safety of five, under static full rated load stresses, based on the ultimate strength of the materials used. Also, since the cask only weighs approximately 25 tons whereas the crane is rated for 130 tons, the crane has an additional safety factor of about six for cask handling operations. Each of the two brakes for the main hoist is capable of holding 150% of the rated load, or 150% of the full motor torque.

The licensee has also provided a description of the cask lifting devices and a listing of all tests that have been performed as part of the final check-out of the crane.

Based on our review of the information submitted, we have concluded that the design of the crane and cask lifting devices provides adequate assurance that the probability of a spent fuel cask drop accident, caused by a system failure, is very low; and thus, is acceptable. Furthermore, per our April 15, 1976 request, the licensee proposed a new Technical Specification (Technical Specification 15.4.14.2) that would establish the maximum weight of the spent fuel shipping cask that may be used. The proposed Technical Specification will prohibit the use of a spent fuel shipping cask heavier than that assumed in the accident analysis. Therefore, it will provide additional assurance that the validity of (1) the accident analysis, and (2) the calculated safety factors in the crane will be maintained; and thus, is acceptable.

Summary

WEPCO has analyzed the consequences of a spent fuel cask drop accident. The results show that a drop in the north pool loading area could violate the leak tightness of the north pool, but the south pool would be unaffected. Fuel is not stored in the north pool during cask handling operations.

In the unlikely event that outleakage from the north pool exceeded makeup capability, the prompt installation of a barrier in the divider wall "notch" would ensure that an adequate level of water was maintained over the spent fuel stored in the south pool. We find the proposed barrier to be acceptable.

To preclude a cask drop directly into or tumbling into the south pool, the licensee has instituted operating procedures, and has proposed the installation of limit switches on crane travel. We have determined that this modification as well as the proposed surveillance requirements are acceptable. Moreover, the licensee has shown that no critical systems could be affected by a cask drop, and that the factors of safety in the crane reduce the probability of a cask drop accident, caused by a system failure, to a very low value. The Technical Specification limit on the weight of the cask that may be used provides additional assurance that the validity of these findings will be maintained. Consequently, we have found the spent fuel cask drop accident analysis and associated design changes and proposed Technical Specifications are acceptable.

Environmental Finding

We have determined that the amendment does not authorize a change in effluent types or total amounts nor an increase in power level and will not result in any significant environmental impact. Having made this determination, we have further concluded that the amendment involves an

action which is insignificant from the standpoint of environmental impact and pursuant to 10 CFR §51.5(d)(4) that an environmental statement, negative declaration, or environmental impact appraisal need not be prepared in connection with this issuance of this amendment.

Conclusion

We have concluded, based on the considerations discussed above, that: (1) because the change does not involve a significant increase in the probability or consequences of accidents previously considered and does not involve a significant decrease in a safety margin, the change does not involve a significant hazards consideration, (2) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, and (3) such activities will be conducted in compliance with the Commission's regulations and the issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public.

Dated: July 6, 1976

UNITED STATES NUCLEAR REGULATORY COMMISSION

DOCKETS NOS. 50-266 AND 50-301

WISCONSIN ELECTRIC POWER COMPANY
WISCONSIN MICHIGAN POWER COMPANY

NOTICE OF ISSUANCE OF AMENDMENTS TO FACILITY OPERATING LICENSES

Notice is hereby given that the U.S. Nuclear Regulatory Commission (the Commission) has issued Amendments Nos. 18 and 23 to Facility Operating Licenses Nos. DPR-24 and DPR-27 issued to Wisconsin Electric Power Company and Wisconsin Michigan Power Company, which revised Technical Specifications for operation of the Point Beach Nuclear Plant Units Nos. 1 and 2, located in the town of Two Creeks, Manitowoc County, Wisconsin. The amendments are effective as of the date of issuance.

The amendment will change the Technical Specifications to (1) add surveillance requirements for the limit switches associated with the auxiliary building crane trolley and bridge motions and (2) establish the maximum weight of the spent fuel shipping cask that may be used.

The application for the amendments complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations. The Commission has made appropriate findings as required by the Act and the Commission's rules and regulations in 10 CFR Chapter I, which are set forth in the license amendments. Prior public notice of these amendments was not required since the amendments do not involve a significant hazards consideration.

The Commission has determined that the issuance of these amendments will not result in any significant environmental impact and that pursuant

to 10 CFR §51.5(d)(4) an environmental statement, negative declaration or environmental impact appraisal need not be prepared in connection with issuance of these amendments.

For further details with respect to this action, see (1) the application for amendments dated May 13, 1976, (2) Amendment No. 18 to License No. DPR-24, (3) Amendment No. 23 to License No. DPR-27, and (4) the Commission's related Safety Evaluation. All of these items are available for public inspection at the Commission's Public Document Room, 1717 H Street N.W., Washington, D. C. and at the University of Wisconsin - Document Department, ATTN: Mr. Arthur M. Fish, Stevens Point Library, Stevens Point, Wisconsin 54481.

A copy of items (2) and (4) may be obtained upon request addressed to the U. S. Nuclear Regulatory Commission, Washington, D. C. 20555, Attention: Director, Division of Operating Reactors.

Dated at Bethesda, Maryland this 5 day of July 1976.

FOR THE NUCLEAR REGULATORY COMMISSION

George Lear

George Lear, Chief
Operating Reactors Branch #3
Division of Operating Reactors