WISCONSIN PUBLIC SERVICE CORPORATION

P.O. Box 1200, Green Bay, Wisconsin 54305

May 15, 1978

Green Bay

Office of Nuclear Reactor Regulation
U. S. Nuclear Regulatory Commission
Washington, D.C. 20555

ATTN: Mr. A. Schwencer, Chief
Operating Reactors Branch #1
Division of Operating Reactors

Gentlemen:

Ref: Docket 50-305
Operating License DPR-43
"Nuclear Plant Fire Protection Functional Responsibilities, Administrative Controls & Quality Assurance"

By letter dated February 14, 1978, you sent us a copy of your fire protection guidelines referenced above. Upon review of that document, we have determined that some modifications to our fire protection organization, procedures and documentation are warranted. Statements made in the attached responses indicate commitments to future actions. Where specifics of the guidelines will not be met, justification and/or alternative methods by which we will achieve a commensurate level of fire protection are outlined.

Enclosed please find twenty (20) copies of the above mentioned responses. We expect to have the aforementioned modifications completed and implemented by August 31, 1978.

Very truly yours,

E. W. James
Senior Vice President
Power Supply & Engineering

EWJ/cmn

Enc.

cc - Mr. Don Knuth, KMC, Inc.

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Exhibit II
Page 1 of 6

II

FIRE FIGHTING PROCEDURES

Fire fighting procedures should be established to cover such items as notification of a fire, fire emergency procedures, and coordination of fire fighting activities with offsite fire departments. The fire fighting procedures should identify:

a. Actions to be taken by individual discovering the fire, such as, notification of control room, attempt to extinguish fire, and actuation of local fire suppression systems.

RESPONSE: *The Kewaunee Nuclear Power Plant Emergency Plan and implementing Administrative Control Directives currently address these items.*

b. Actions to be taken by the control room operator and the need for brigade assistance upon report of a fire or receipt of alarm on control room annunciator panel, such as: announcing location of fire over PA system, sounding fire alarms and notifying the shift supervisor and the fire brigade leader of the type, size, and location of the fire.

RESPONSE: *The Kewaunee Nuclear Power Plant Emergency Plan and implementing Administrative Control Directives currently address these items.*

c. Actions to be taken by the fire brigade after notification by the control room operator of a fire, including: location to assemble; directions given by fire brigade leader; and responsibilities of brigade members such as selection of fire fighting equipment and transportation to fire location, selection of protective equipment, use of fire suppression systems operating instructions, and use of preplanned strategies for fighting fires in specific areas.

RESPONSE: *The Plant Administrative Control Directives and Operating Procedures cover these items.*

d. The strategies established for fighting fires in all safety-related areas and areas presenting a hazard to safety-related equipment. As a minimum the following subjects should be covered:

(1) Identification of combustibles in each plant zone covered by the specific fire fighting procedures.

RESPONSE: *We do not have nor do we intend to develop specific fire fighting procedures for each safety-related area. Our philosophy is to train fire brigade personnel in basic fire fighting principles, techniques for fighting various types of fires, and use of equipment available so that they will be best suited to use good judgement based on the conditions encountered.*

Identification of combustibles in each plant zone is found in the Kewaunee Fire Protection Analysis. Each fire brigade leader will be familiar with this analysis and all fire brigade members will attend drills which will cover these items.

(2) Fire extinguishants best suited for controlling the fires associated with the combustible loadings in that zone and the nearest location of these extinguishants.

RESPONSE: *This is covered in our training program and locations of extinguishers and fire fighting equipment is addressed in the Kewaunee Fire Protection Analysis.*

(3) Most favorable direction from which to attack a fire in each area, in view of the ventilation direction, access hallways, stairs and doors which are most likely to be fire-free, and the best station or elevation for fighting the fire. A specific identification system shall designate the hallways, stairs, doors, fire equipment and system control locations, and other items described in the fire fighting procedures. This identification should be used in the procedures and the

(3) (Cont.)

corresponding plant items should be prominently marked so that they can be recognized in dim light. All access and egress routes that involve locked doors should be specifically identified in the procedure with the appropriate precautions and methods for access specified.

RESPONSE: *These items are addressed in training and drills held with the fire brigades. Area identification is covered in the Kewaunee Fire Protection Analysis.*

(4) Designation of plant systems that should be managed to reduce the damage potential during a local fire; location of local and remote controls for such management (e.g., any hydraulic or electrical systems in the zone covered by the specific fire fighting procedure that could increase the hazards in the area because of overpressurization or electrical hazards).

(5) Designation of vital heat-sensitive system components that should be kept cool while fighting a local fire. Critical equipment which are particularly hazardous combustible sources should be designated to receive cooling.

(6) Organization of fire fighting brigades and the assignment of special duties according to job title so that all fire fighting functions are covered by any complete shift personnel complement. These duties should include command control of the brigade, fire hose laying, applying the extinguishant to the fire, advancing support supplies to the fire scene, communication with the control room, coordination with outside fire departments.

(7) Identification radiological and toxic hazards in fire zones.

(8) Ventilation system operation that assures desired plant pressure distribution when the ventilation flow is modified for fire containment or smoke clearing operations.

(9) Operations requiring control room and shift engineer coordination or authorization.

(10) Instructions for plant operators and general plant personnel during fire.

RESPONSE: *These items are addressed in the Kewaunee Nuclear Power Plant Emergency Plan, Administrative Control Directives, or in the training, drills and practice sessions held on routine intervals.*

e. The validity of the preplanning strategies should be tested by appropriate full-dress drills to check the logic of the strategy, the adequacy of the equipment, personnel understanding, and to uncover unforeseen problems.

RESPONSE: *The Kewaunee Nuclear Power Plant Fire Protection Program will be tested to verify the above concerns at the interval specified in Technical Specifications.*

f. Actions to be taken by Plant Superintendent and his staff, and Security Guards after notification of a fire.

RESPONSE: *These items are addressed in the Emergency Plan and Administrative Control Directives.*

g. Actions to be taken that will coordinate fire fighting activities with offsite fire departments, including: identification of individual responsible for assessing situation and calling in outside fire department assistance when needed; identification of individual who will direct fire fighting activities when aided by offsite fire fighting assistance; provisions for including offsite fire fighting organizations in fire brigade drills at least once per year; and provisions for training offsite fire department personnel in basic radiation principles, typical radiation hazards, and precautions to be taken in a fire involving radioactive materials in the plant. The procedures should also describe the offsite fire department's resources and estimated response time by the offsite fire department to provide assistance to the station.

g. (Cont.)

RESPONSE: *These items are addressed in the Emergency Plan. We do not provide basic training in radiation principles to off-site fire department personnel. We will provide a fully trained and qualified escort if off-site fire department personnel are allowed within the plant premises to fight a fire. The Kewaunee Plant fire brigade and on-call fire brigade are designed to be fully self-sufficient within the plant proper, therefore, this training is unnecessary and considered impractical to provide for a large volunteer civilian fire department.*

3.0 SUMMARY OF MODIFICATIONS AND INCOMPLETE ITEMS

3.1 Modifications

The licensee plans to make certain plant modifications to improve the fire protection program as a result of both his and the staff's evaluations. Such proposed modifications are summarized below. The sections of this report which discuss the modifications are noted in parentheses following each item. Further detail is contained in the licensee submittals. All modifications will be completed in accordance with the scheduled dates given in Table 3.1. Certain items listed below are marked with an asterisk to indicate that the NRC staff will require additional information in the form of design criteria to assure that the design is acceptable prior to actual implementation of these modifications. The design information required has been discussed with the licensee. These design criteria should be provided at least 90 days before implementation. The balance of the other modifications has been described in an acceptable level of detail.

3.1.1 Relay Room Carbon Dioxide System

A total flooding carbon dioxide system, manually actuated, will be provided in the relay room and cable spreading area; isolation dampers actuated by the carbon dioxide system will be installed in the relay room ducts (5.8, 4.3.2).

3.1.2 CO_2 Tank Room Barriers

The CO_2 tank room will be separated from the turbine building by sealing barrier penetrations and providing a fire door (5.14).

3.1.3 Reactor Coolant Pump Suppression System

An automatic foam suppression system will be provided for each of the two reactor coolant pumps (5.1, 4.3.1.6).

3.1.4 Maintenance Storage Area Suppression System

The existing wet pipe sprinkler system for the maintenance storage area in the auxiliary building will be modified to an automatic deluge system (5.7, 4.3.1.5).

3.1.5 Cable Tray Sprinkler System

A wet pipe sprinkler system will be installed to provide coverage of safety-related cable trays at elevation 616 feet of the auxiliary building, fire area AX-32 (5.7, 4.3.1.5).

3.1.25 Administrative Control Changes

Procedures are being developed or changed to incorporate controls over combustible materials and ignition sources, fire brigade staffing and training, fire fighting procedures, quality assurance provisions, and definition of fire protection duties and responsibilities (6.0).

3.1.26 Reactor Building Service Water Hose

The licensee will verify that available service water hose lines in the reactor building will reach significant cable concentrations and provide sufficient hose so that this may be achieved (4.3.1.4).

3.1.27 Cooking Area Exhaust Hood

The oven unit and burners in the control room cooking area will be replaced with a microwave oven (5.6).

3.1.28 Fire Hose Nozzles

"Electrical" type nozzles will be provided at the hose stations located near high voltage equipment (4.3.1.4).

3.2 Incomplete Items

Our review of certain items of the licensee's fire protection program is not yet complete. The incomplete items are listed below. The schedule for the licensee's submittal of additional information known is given in Table 3.2. This schedule has been established such that, if our review indicates the need for further modifications, they can be implemented on a schedule consistent with the completion schedule for the modifications listed in Section 3.1.

3.2.1 Fire Brigade Size

The staff has taken the position that a minimum fire brigade of five trained individuals should be provided on all shifts. The licensee is continuing to review this position and possible use of certain security personnel to help in satisfying this position. The licensee should provide details on the training to be provided additional personnel to assure an adequately trained five-man fire brigade ((6.0).

3.2.2 Safe Shutdown Instrumentation

The staff has taken the position that instrumentation required for safe shutdown be provided independent of fire damage that may result to wiring in the relay or control rooms. The licensee has provided the results of an analysis to show that safe shutdown can be achieved and maintained without instrumentation that may be damaged in a relay room fire. The staff is reviewing the licensee's analysis and will request additional details from the licensee (4.10, 5.6, 5.8).

TABLE 3.1

IMPLEMENTATION DATES FOR PROPOSED MODIFICATIONS

		Item	Date
	3.1.1	Relay Room Carbon Dioxide System	Complete
	3.1.2	CO_2 Tank Room Barriers	Prior to startup following next refueling
**	3.1.3	Reactor Coolant Pump Suppression System	Prior to startup following next refueling
	3.1.4	Maintenance Storage Area Suppression System	Prior to startup following next refueling
**	3.1.5	Cable Tray Sprinkler System	Prior to startup following next refueling
**	3.1.6	Hose Stations	Complete
	3.1.7	Fire Doors	Complete
	3.1.8	Sealing of Fire Barrier Openings	January 1, 1980
	3.1.9	Ventilation Duct Penetrations	Prior to startup following next refueling
	3.1.10	Fire Detection System Electrical Supervision	Complete
	3.1.11	Portable Smoke Removal Equipment	January 1, 1979
	3.1.12	Battery Room Ventilation Monitors	Prior to startup following next refueling
	3.1.13	Hose Cart	January 1, 1979
	3.1.14	Post Indicator Value	Prior to startup following next refueling
	3.1.15	Screenhouse Sprinkler System	January 1, 1980
	3.1.16	Gasketed Fire Door	Complete
	3.1.17	Supplemental Lighting	Complete
	3.1.18	Diesel Generator Room Curbing	Prior to startup following next refueling
	3.1.19	Control Room Extinguisher	Complete
**	3.1.20	Reactor Building Fire Hose Nozzles	Prior to startup following next refueling
	3.1.21	Valve Supervision	Complete
	3.1.22	Protection from Water Spray	Prior to startup following next refueling
	3.1.23	Fire Door Control	February 23, 1979
**	3.1.24	Fire Detectors	Prior to startup following next refueling
	3.1.25	Administrative Control Changes	April 1, 1979
	3.1.26	Reactor Building Service Water Hose	Prior to startup following next refueling
	3.1.27	Cooking Area Exhaust Hood	Complete
	3.1.28	Fire Hose Nozzles	Complete

**New or revised Technical Specifications should be prepared for these modifications at least 90 days prior to implementation of the modification.

6.0 ADMINISTRATIVE CONTROLS

The administrative controls for fire protection consists of the fire protection organization, the qualifications and training for fire protection personnel, the controls to be exercised over combustibles and ignition sources, plans and procedures for fighting fires in the various plant areas, and the quality assurance provisions for fire protection. The licensee has provided a detailed description of proposed administrative controls. Plans and procedures stipulating the management and staff organization and its qualifications; the fire brigade training program; controls over combustibles and ignition sources; and the pre-fire plans for fighting fires are being revised or developed, and implemented. The program and its implementing procedures as provided by letter from the licensee dated May 15, 1978, and as supplemented by letter dated August 4, 1978, are found acceptable by the staff, except as noted below, using items referenced in Sections 1.0(e) and 1.0(f).

We have evaluated the areas at Kewaunee to determine the minimum required fire brigade size to cope with fires that may occur, and have determined that a five man brigade is required. The licensee has proposed a three man fire brigade to be available on site during all shifts, along with two additional support personnel who have some fire fighting training. We are continuing to evaluate the adequacy of the training for the support personnel to determine whether they may be considered members of the fire brigade. We find that the training provided the three brigade members is satisfactory.

We find that, subject to implementation of the above described programmatic changes, and resolution of the size of the fully trained fire brigade the fire protection program satisfies the objectives identified in Section 2.2 of this report. We will address the adequacy of the fire brigade size in a supplement to this report.