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SUBJECT: Application for amends to Licenses DPR-58 & DPR-74,changing TS 3/4.7.9.1 to reflect installation of two fire protection water storage tanks & three pumps to supply sufficient quantity of clean water to fire suppression sys.

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AEP:NRC:0692CC

Donald C. Cook Nuclear Plant Units 1 and 2
Docket Nos. 50-315 and 50-316
License Nos. DPR-58 and DPR-74
TECHNICAL SPECIFICATIONS CHANGE REQUEST:
FIRE WATER STORAGE TANKS

U. S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, D. C. 20555

Attn: T. E. Murley

February 12, 1992

Dear Dr. Murley

This letter and its attachments constitute an application for changes to the Technical Specifications (T/Ss) for Donald C. Cook Nuclear Plant Units 1 and 2 in accordance with 10 CFR 50.90. We are proposing to amend T/S 3/4 7.9.1 for both units to reflect the installation of two fire protection water storage tanks and three pumps to supply a sufficient quantity of clean, reliable water to the plant's fire suppression systems.

Currently, the Cook Nuclear Plant fire suppression system is supplied by Lake Michigan. However, in the last few years zebra mussels have propagated in Lake Michigan, posing a threat to the reliability of the existing fire protection system. Consequently, we have decided to erect two dedicated fire protection water tanks, which will provide a reliable source of clean water to the fire protection system.

In addition, the existing 2000 gpm diesel-engine driven pumps will be maintained to facilitate the capability of obtaining water from Lake Michigan. However, these pumps and their associated pipes will be isolated from the rest of the fire protection water system to preclude the possibility of infesting the fire protection water system with zebra mussels. The automatic controls are being removed from these pumps, thus necessitating local manual action to initiate their operation.

Attachment 1 provides a detailed description of the proposed changes, the justification for the changes, and our proposed determination of no significant hazards consideration performed

pursuant to 10 CFR 50.92. Attachment 2 contains the existing pages marked to reflect the proposed changes. Attachment 3 contains the proposed T/Ss pages. The proposed T/Ss changes are based on Westinghouse Standard T/S 3/4.7.11.

We would appreciate your staff's expeditious review of this submittal to support operation of the new system by March of 1993. If the proposed T/Ss are not approved by then, we would further subject ourselves to mussel infestation, since the zebra mussel breeding season begins in the spring of each year.

We believe that the proposed changes will not result in (1) a significant change in the amounts of any effluent that may be released offsite, or (2) a significant increase in individual or cumulative occupational radiation exposure.

The proposed changes have been reviewed by the Plant Nuclear Safety Review Committee and by the Nuclear Safety and Design Review Committee.

In compliance with the requirements of 10 CFR 50.91(b)(1), copies of this letter and its attachments have been transmitted to Mr. J. R. Padgett of the Michigan Public Service Commission and to the Michigan Department of Public Health.

This document has been prepared following Corporate procedures that incorporate a reasonable set of controls to ensure its accuracy and completeness prior to signature of the undersigned.

Sincerely,

E. E. Fitzpatrick
Vice President

Attachments

cc: D. H. Williams, Jr.
A. A. Blind - Bridgman
J. R. Padgett
G. Charnoff
A. B. Davis - Region III
NRC Resident Inspector - Bridgman
NFEM Section Chief

Attachment 1 to AEP:NRC:0692CC

10CFR50.92 Analysis for Changes to the
Donald C. Cook Nuclear Plant Units 1 and 2
Technical Specifications

1.0 SECTIONS TO BE CHANGED

Technical Specifications (T/Ss) 3/4.7.9 for Units 1 and 2.

2.0 EXTENT OF CHANGE

We propose to modify T/Ss 3/4.7.9 to reflect the design changes in the fire suppression water system. The T/Ss are being revised to update the number of fire suppression pumps in the system from four 2000 gpm pumps common to both units to three 2500 gpm pumps that take suction from dedicated fire water tanks and two 2000 gpm pumps that take suction from Lake Michigan. All five pumps in the new configuration are common to both units. Also, we propose to add a Limiting Condition for Operation that requires separate water supply tanks, each with a minimum usable volume of 565,000 gallons. Finally, we propose to make changes in the action and surveillance requirements to reflect the addition of the tanks and new pumps.

3.0 CHANGES REQUESTED

We are proposing to make the following changes to both Unit 1 and Unit 2 T/S 3/4.7.9.

Revise the Limiting Condition for Operation to Reflect the New Number of Pumps and the Addition of Two Fire Water Tanks

Currently the Limiting Condition for Operation reads as follows:

> 3.7.9.1 The fire suppression water system shall be OPERABLE with:
>
> a. Two* high demand 2000 GPM pumps, one of which shall be a diesel driven pump, with their discharge aligned to the fire suppression header.
>
> b. An OPERABLE open flow path capable of taking suction from Lake Michigan and transferring the water through distribution piping (with OPERABLE sectionalizing valves) up to the yard hydrant curb control valves and up to the hose station valve(s) or water suppression system controlling valve(s) required to be OPERABLE per Specifications 3.7.9.5 and 3.7.9.2, respectively.
>
> *Four High Demand Fire Pumps (two per unit) are shared between Units 1 and 2.

We propose to modify the T/S as follows:

3.7.9.1 The fire suppression water system shall be considered to be OPERABLE with:

a. Three of the five fire suppression system pumps OPERABLE, two of which must be the following:

1. One diesel-engine-driven pump having a capacity of 2500 gpm capable of taking suction from either of the fire water storage tanks, with its discharge aligned to the fire distribution piping.

2. One fire suppression system pump having a capacity of 2000 gpm capable of taking suction from Lake Michigan and its discharge capable of being manually aligned to the fire distribution piping.

b. An OPERABLE flow path capable of taking suction from either one of the fire water tanks and transferring the water through distribution piping (with OPERABLE sectionalizing valves) up to the yard hydrant curb control valves and up to the hose station valve(s) or water suppression controlling valve(s). The hose station valve(s) and the water suppression system controlling valve(s) that are required to be in the flow path are given in Specifications 3.7.9.5 and 3.7.9.2, respectively.

c. Two fire water tanks, each with a minimum usable volume of 565,000 gallons (34.0 feet level indication).

d. An OPERABLE isolated flow path capable of taking suction from Lake Michigan and transferring the water through distribution piping (with OPERABLE sectionalizing valves) up to the yard hydrant curb control valves and up to the hose station valve(s) or water suppression system controlling valve(s). The hose station valve(s) and water suppression system controlling valve(s) that are required to be OPERABLE are given in Specifications 3.7.9.5 and 3.7.9.2 respectively.

<u>Revise Action Statement (a)</u>

Currently T/S 3.7.9.1 Action Statement (a), for both units, states:

With only one pump OPERABLE, restore an inoperable pump (diesel, if required), and equipment to OPERABLE status within 7 days or establish a backup fire suppression system within the next 7 days. The provisions of Specifications 3.0.3 and 3.0.4 are not applicable.

We are proposing to amend this action statement to state:

With less than the minimum number of pumps OPERABLE, take the ACTION shown in Table 3.7-5.

As can be seen in Attachment 3, Table 3.7-5 specifies the required actions to be taken based on the number and type of pumps available.

Add a new Action Statement (b) to Address an Inoperable Fire Water Tank

The new action statement is proposed as follows:

> With one fire water storage tank inoperable, restore the inoperable tank to OPERABLE status within 30 days or establish a backup fire suppression water system within the next 7 days.

Because of the new Action Statement (b), the existing Action Statement (b) will be renumbered to (c).

Add a new Action Statement (d)

Rather than reiterate the following statement in each action statement, we are proposing to state it just once as item (d):

> The provisions of Specifications 3.0.3 and 3.0.4 are not applicable.

Add a New Surveillance Requirement for the Fire Water Tanks

We are proposing to add the following new surveillance requirement for the fire water storage tanks:

> (a) At least once per 7 days by verifying the water supply contained in the fire water tanks.

Because the new surveillance requirement was labeled as (a), the subsequent surveillance requirements have been relabeled.

Modify Existing Surveillance Requirement e(2) to Address the New 2500 gpm Pumps

Currently Surveillance Requirement e(2) states:

> At least once per 18 months by performing a system functional test which includes simulated automatic actuation of the system throughout its operating sequence, and:
>
> > Verifying that each pump develops a flow of at least 2000 gpm at a system head of at least 300 feet of water by observing three points (minimum, rated, and peak) on the pump's performance curve.

We are proposing to modify the surveillance requirement to specifically address the pumps that take suction from the fire water tanks. The flow rate for these pumps is 2500 gpm, rather than 2000 gpm as stated in the current T/S. The new surveillance requirement, which is relabeled as f(2), will read as follows:

At least once per 18 months by performing a system functional test which includes simulated automatic actuation of the system throughout its operating sequence, and:

Verifying that each pump that takes suction from the fire water tanks develops a flow of at least 2500 gpm at a system head of at least 300 feet of water by observing three points (minimum, rated, and peak) on the pump's performance curve.

Change Surveillance Requirements to Reflect Multiple Diesel Fuel Oil Tanks

We are proposing to use the plural form of several words in Surveillance Requirements 4.7.9.1.2 and 4.7.9.1.3 to reflect multiple diesel fuel oil tanks, fire pump diesel engines, battery banks, and chargers.

Add a New Surveillance Requirement to Specifically Address Testing for the Pumps that take Suction from Lake Michigan

Currently Surveillance Requirement e(2) states:

At least once per 18 months by performing a system functional test which includes simulated automatic actuation of the system throughout its operating sequence, and:

Verifying that each pump develops a flow of at least 2000 gpm at a system head of at least 300 feet of water by observing three points (minimum, rated, and peak) on the pump's performance curve.

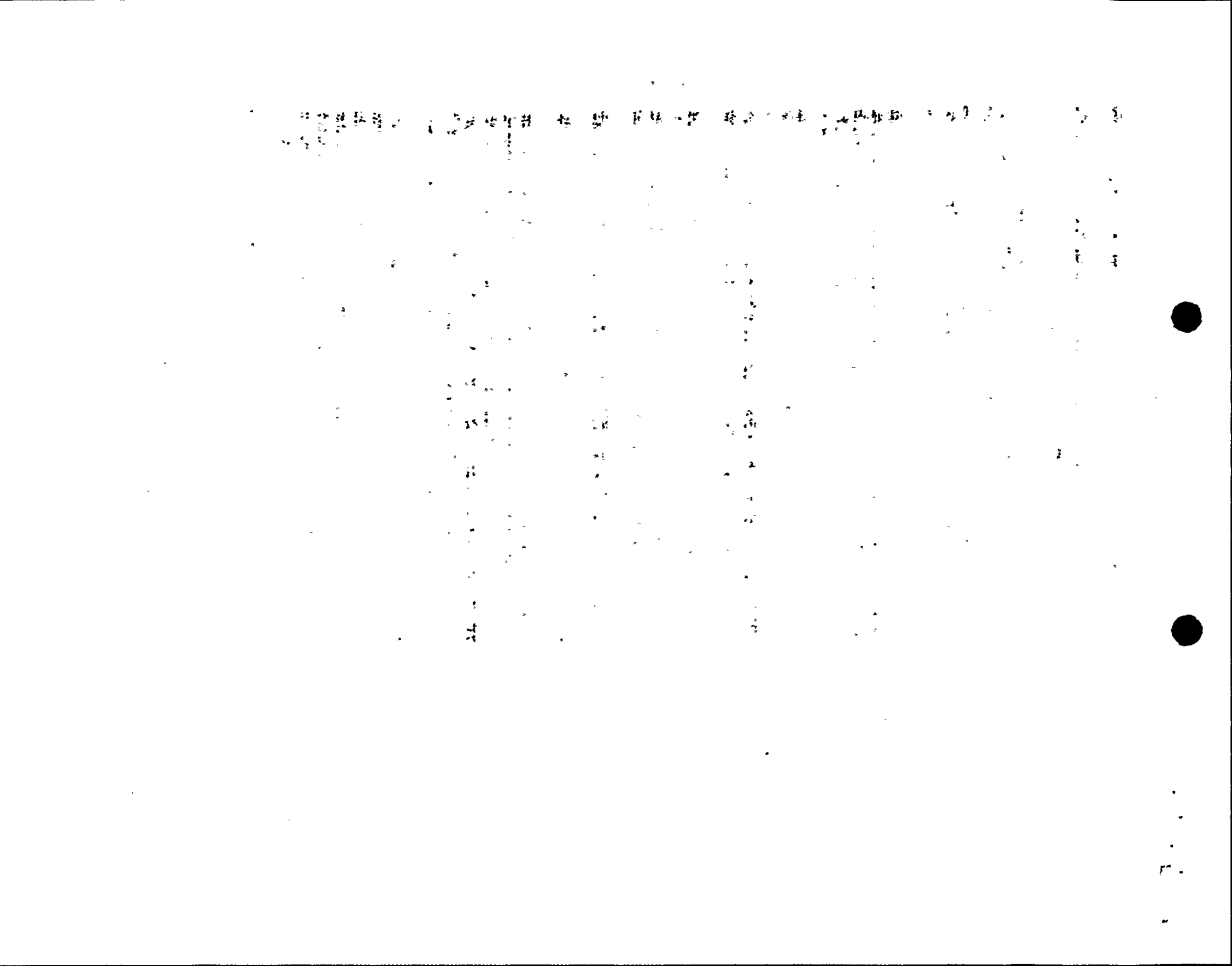
Since the instrumentation that would initiate automatic actuation of these pumps is being removed, a new surveillance requirement, which is numbered (g), states:

At least once per 18 months by verifying that each pump that takes suction from Lake Michigan develops a flow of at least 2000 gpm at a system head of at least 300 feet of water by observing three points (minimum, rated and peak) on the pump's performance curve,

Revise the Bases to Reflect the New System

The following four paragraphs are being added to Bases Section 3/4.7.9:

The fire suppression water system has five fire suppression system pumps common to both units which discharge into underground ring headers. There are two diesel-engine-driven, vertical-turbine fire pumps rated at 2000 gpm, each taking suction from Lake Michigan; one motor-driven horizontal centrifugal fire pump rated at 2500 gpm that takes suction from the fire water storage tanks; and two diesel-engine-driven horizontal centrifugal fire pumps rated at 2500 gpm that take suction from the fire water storage tanks. Having a combination of diesel-driven and electric-motor-driven pumps in the



system design is consistent with NRC Branch Technical Position APSCB 9.5-1.

Requiring one of the 2000 gpm diesel-engine-driven pumps that takes suction from Lake Michigan and one of the 2500 gpm diesel-driven pumps that takes suction from a fire water storage tank to be OPERABLE ensures the capability of obtaining water from both sources. This conservatism results in enhanced system reliability and reduced risk from external events.

Technical Specification 3.7.9.1 requires three fire water suppression system pumps to be OPERABLE for the fire suppression water system to be OPERABLE. One of these pumps must be a 2500 gpm diesel-driven pump capable of taking suction from either fire water storage tank and one a 2000 gpm fire suppression pump capable of taking suction from Lake Michigan. The third pump may take suction from either water source.

The flow paths capable of taking suction from Lake Michigan are normally isolated to preclude zebra mussel infestation of the system.

In addition, the following sentence is being added:

In the event that the fire water tanks become inoperable, Lake Michigan may serve as its backup.

Revise the Bases Section 3/4 7.9 to make the Bases Consistent Between Units

The following is being deleted from Unit 2 Bases page B 3/4 7-7:

other tasks (e.g., an operator on tour) provided that such personnel fulfilled the above stated requirements. As a minimum, each area affected by an isolated low pressure CO_2 system must be visited every twenty-five (25) to thirty-five (35) minutes by the Roving Fire Watch Patrol. Such measures will provide the necessary level of fire protection while affording necessary provisions for personnel safety.

In the event the fire suppression water system becomes inoperable, immediate corrective measures must be taken since this system provides the major fire suppression capability of the plant. The requirement for a twenty-four hour report to the Commission provides for prompt evaluation of the acceptability of the corrective measures to provide adequate fire suppression capability for continued protection of the nuclear plant.

These statements are no longer applicable, and have already been deleted from Unit 1.

4.0 DISCUSSION

Justification for Change

The function of the fire protection water system is to control and extinguish fires in the plant. This is currently accomplished by an unlimited water supply (Lake Michigan), fire pumps, piping network, manual hose standpipes, automatic operating valves, control equipment, distribution nozzles and other hardware.

However, the water from Lake Michigan is infested with zebra mussels, which would, if left uncontrolled, infest the fire protection water system piping. The methods currently available to kill zebra mussels are labor intensive and complicated to implement. Consequently, we decided to design a source of water independent of the lake while continuing to research any other successful developments to resolve the zebra mussel problem.

Justification for Proposed Action Statements

We are proposing that, with less than the minimum number of pumps OPERABLE, the action shown in Table 3.7-5 be taken. Currently, our T/Ss allow us seven days to return inoperable pumps to service. We are maintaining this seven-day time restriction in instances in which we have a minimum of two pumps operable. However, in instances in which we have only one pump operable, we are allowing four days to return an inoperable pump to service. Since we need at least two pumps to extinguish our worst case fire hazard, as described in the Fire Protection Program Manual (FPPM), we have decided that our T/Ss should require the second pump to be returned to operable status as expeditiously as possible.

In instances in which we have three pumps, but not the correct combination to meet the requirements specified in the limiting condition of operation (LCO), we are proposing a time limit of 14 days to return an inoperable pump to operable status. Since we already have one more fire suppression system pump operable than we need to extinguish the worst case fire hazard, the safety significance of not having the combination of pumps specified in the LCO is relatively small. Consequently, we are proposing a slightly less stringent action statement in this instance.

Current System Description

General Design Basis

The fire protection water flow may vary from 30 to 65 gpm for a single sprinkler head in operation to as much as 4700 gpm for the combined flow, including hose streams, for the Unit 1 main transformer and turbine building wall exposure systems. Consequently, it is not practical to try to meet this range of water flow with a single fire pump. Accordingly, the fire suppression systems have been divided into those having low water demand and those with much larger water demands. These systems have been identified as the "low demand fire system" and the "high demand fire system." Collectively they are referred to as the "emergency fire system."

Water Supply

The source of water for the fire protection water system is Lake Michigan.

Fire Pumps

Two horizontal, centrifugal, electric-motor-driven fire pumps are provided for high demand fires. These pumps are designed to start immediately upon a "high demand fire" signal or with varying time delays if additional capacity is needed for low demand fires. Each pump is driven by a 300-horsepower motor and rated at 2000 gpm at 152 psi. Suction is from the nonessential service water (NESW) suction header which draws from the circulating water discharge tunnel of each unit. One motor-driven pump is provided for each unit.

Two diesel-engine-driven, vertical turbine fire pumps are also provided for high demand fires in the event of a complete power failure or for additional capacity. Each pump is driven by a 325-horsepower engine and rated at 2000 gpm at 152 psi. Suction is from the circulating water intake chamber behind the travelling screens in the screenhouse.

One horizontal, centrifugal, electric-motor-driven fire pump is provided for the low demand system. This pump is designed to start immediately upon a "low system pressure" signal. This pump is driven by a 100-horsepower motor and rated at 500 gpm at 152 psi. Suction is from the Unit 1 NESW suction header which draws from the circulating water discharge tunnel. This pump is located in Unit 1, but serves both units. Although this pump is being removed, there are no T/Ss requirements on this pump.

One horizontal, centrifugal, electric-motor-driven jockey pump is provided to pressurize the fire system piping. The pump is driven by a 10-horsepower motor and rated at 50 gpm at 76 psi. Suction is from the Unit 1 NESW pump discharge. Although this pump is being removed, there are no T/Ss requirements on this pump.

Fire Piping

The fire pumps discharge into underground ring headers around the outside of the plant and into the interior ring header in the turbine building. The outside headers consist of 12-inch Class 200 asbestos-cement, and ductile iron pipe. A 10-inch welded steel interior loop header is located in the turbine and screenhouse buildings. This interior header is connected to the outdoor loop header by valved connections routed through the service building, auxiliary building and the yard. This arrangement forms a series of smaller interior/exterior loops connected through isolating valves to ensure flow from multiple directions.

Current System Operation

High Demand Fire System

When an initiating device for a high demand fire system is operated, it sends an electric signal to the fire pump logic system and the sequence to start the electric-motor-driven fire pump for that unit is begun. If more than one suppression system operates at a time, additional capacity may be needed. If this is the case, the header pressure will decrease. An electrical contact will close a pressure switch when the header pressure drops to 140 psi. This then initiates the starting logic for the electric-motor-driven fire pump for the opposite unit. Both pumps are designed to lock-in so that they will not start and stop as the pressure increases and decreases. Relief valves open in the event that system pressure becomes excessive.

If for some reason the pressure drops below 120 psi, one of the diesel-engine-driven pumps will start. If demand is still not met, then the other diesel-engine-driven fire pump will start.

There are also provisions to locally start and stop each electric-motor-driven and diesel-engine-driven pump.

Low Demand Fire System

A 500 gpm pump located in Unit 1 has been provided for the low demand fire system. When a pressure drop not associated with the high demand logic occurs, a pressure switch will initiate the emergency fire system logic to energize the low demand fire system. The 500 gpm fire pump will immediately start. Any low demand fire system actuation will also automatically put the high demand fire system's electric-motor-driven and diesel-engine-driven fire pumps on emergency standby. Even though the high demand fire system would eventually start the two diesel-engine-driven fire pumps, the low demand system makes direct provision for starting them.

New System Description

Design Basis of New System

In selecting the capacity and quantity of fire pumps required for an adequate fire suppression water supply, a number of factors were taken into consideration. Some of these factors are as follows:

- The requirements of the largest single fire hazard.
- The number of protected hazards which might be expected to be involved in a given fire and the total water flow required if all are involved.
- The average water demand required for hose lines or small sprinkler systems.

- The pump head necessary to supply the automatic system (or hose outlets) at the highest and most hydraulically remote locations in the plant.

- Reliability of the electrical source supplying the electric-motor-driven fire pumps.

- The potential, although unlikely, catastrophic failure of the fire water tanks creating the scenario of no source of water being available for fire suppression.

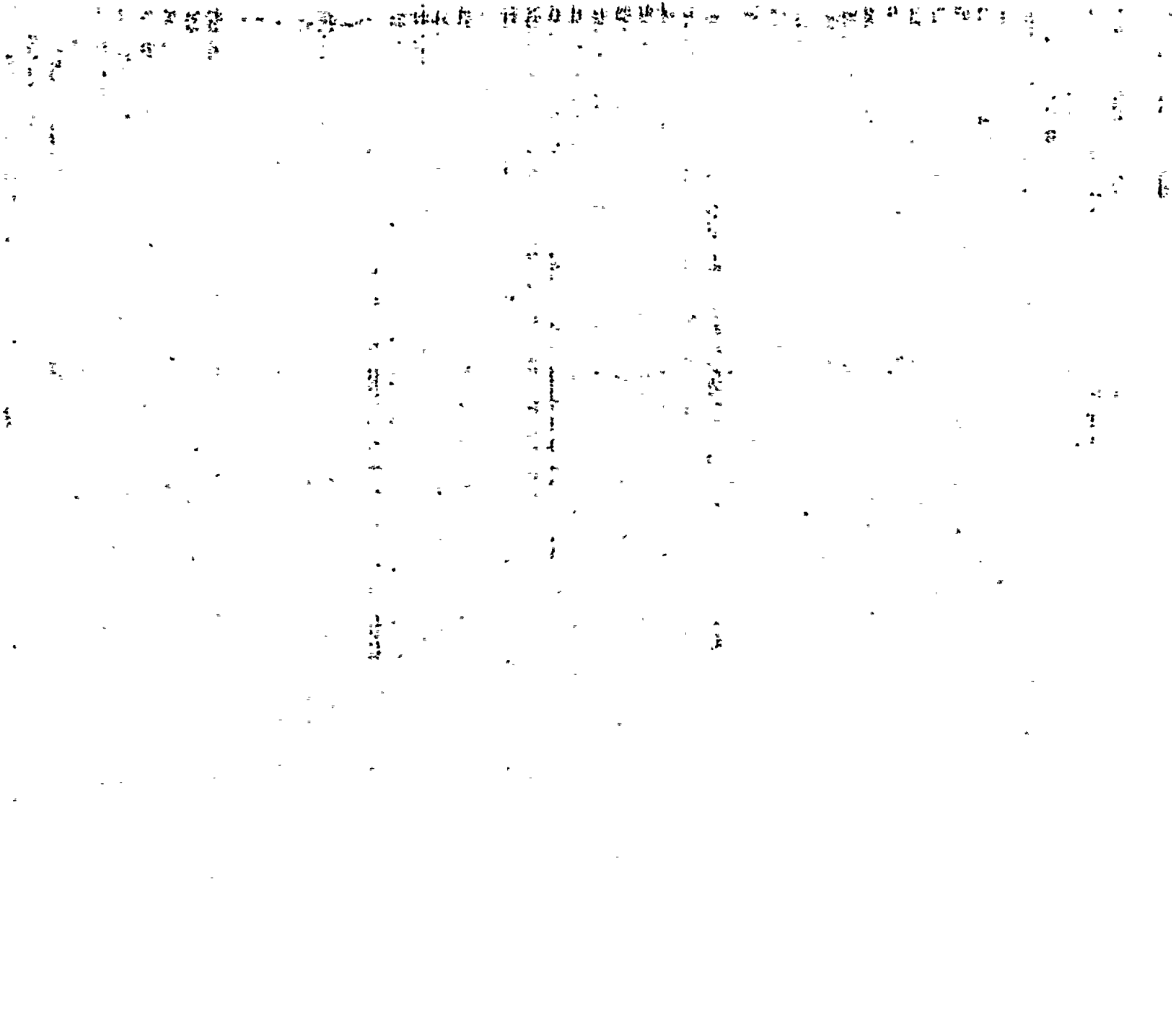
The fire water storage tanks have been seismically designed to conform to Uniform Building Code Zone 1 requirements. Consequently, although they are not Seismic Class I, the tanks will withstand an earthquake of a magnitude that may be expected in this zone. There is no requirement to build this system as Seismic Class I.

As part of our August 19, 1977 submittal that transmitted responses to NRC questions on fire protection at Cook Nuclear Plant, we provided several hand drawn sketches. These sketches indicated that the loads powered by the 4 Kv source, including the existing electric motor-driven fire pumps, are on the emergency diesel generators. However, we do not intend for the new electric-motor-driven pump to be loaded onto the emergency diesel generator. The new design has four diesel-engine-driven pumps that are capable of supplying fire protection water in the event of a loss of offsite power. To address the scenario of a fire and simultaneous loss of offsite power, the proposed T/Ss require that two out of the three pumps that must be operable for the system to be operable be diesel-engine-driven. Since only two pumps are needed to extinguish our worst case fire hazard, we will have ample fire extinguishing capability even in the event of a loss of offsite power.

Fire Water Storage Tanks and Water Supply

The function of the dedicated fire protection water system is to provide a reliable supply of clean water to the plant's fire suppression systems. This will be accomplished by dedicated fire water storage tanks, fire pumps, and a piping network. This water supply system will tie into the existing underground ring header.

Two fire water storage tanks will be erected, each large enough to extinguish the largest expected design basis fire at Cook Nuclear Plant. Suction will be taken off of only one tank at a time. The three pumps being installed to take suction from these tanks are common to both tanks. Motor-operated butterfly valves will work in conjunction with water level gauges to keep the water level between 612,400 gallons and 621,000 gallons. This should ensure compliance with the proposed T/Ss requirement of a minimum usable volume of 565,000 gallons, which is equivalent to a level indication of 34 feet. This proposed T/Ss requirement is the amount of water needed to extinguish the largest single fire hazard as described in the FPPM.



Normally, make-up water to the tanks will come from the plant's connection to the Lake Township water supply. However, Branch Technical Position APSCB 9.5-1 requires that both tanks be capable of being refilled in a minimum of eight hours. If the tanks are nearly empty, then refilling them in a minimum of eight hours from the Lake Township water supply will overburden the plant's clean water supply system. Consequently, in this event, the tanks will be filled with water from Lake Michigan. In the event that the tanks are refilled with lake water, the water will be immediately treated to kill zebra mussels. The only time that we envision this occurring is subsequent to extinguishing a major fire that would drain the tanks. Refilling the tanks following routine surveillances, testing and small fires would not drain them to a level that would necessitate the use of Lake Michigan water. In accordance with Appendix A to Branch Technical Position APSCB 9.5-1, each tank will hold 100% of the system capacity. As such, only one tank is needed to put out the worst case fire.

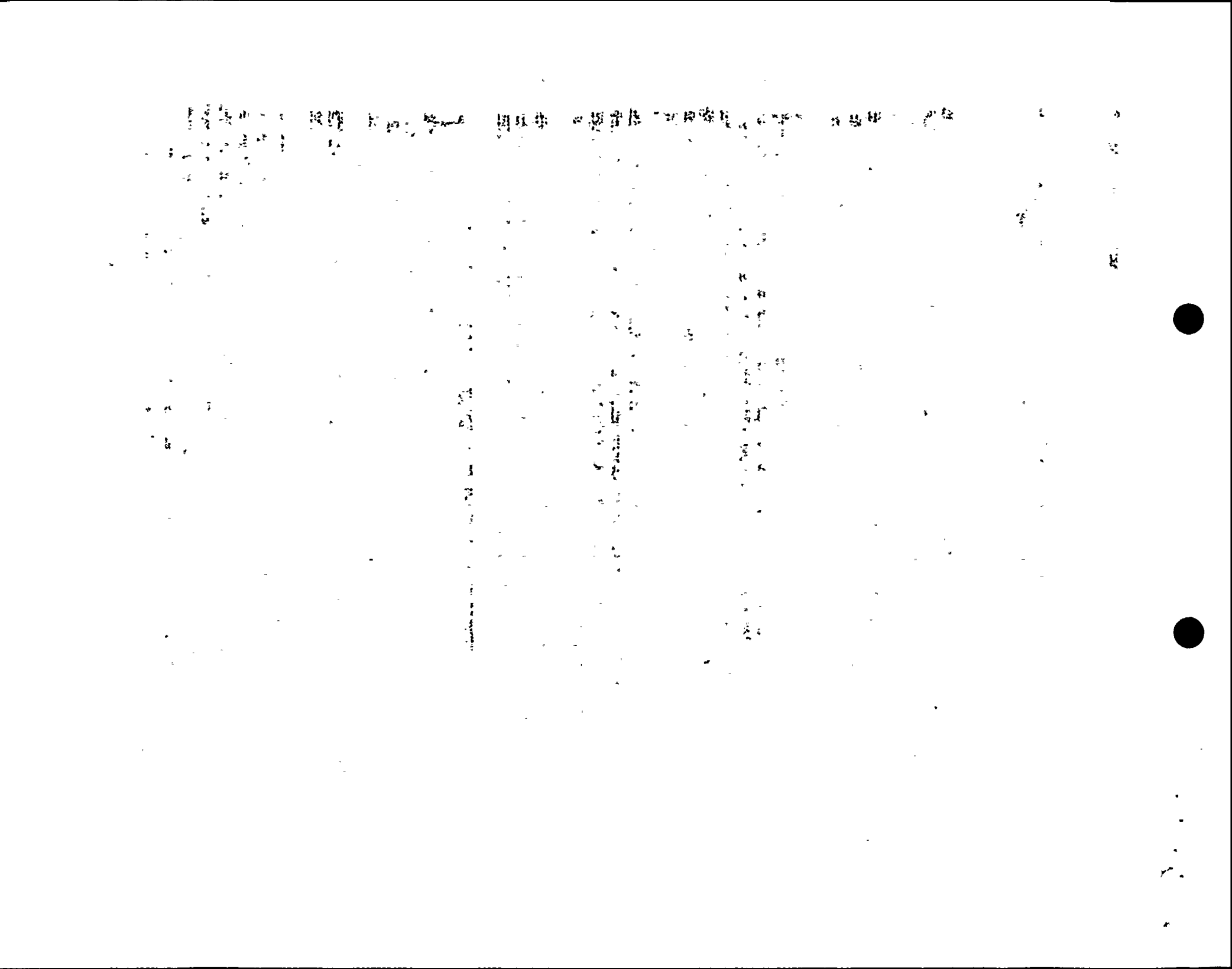
Fire Pumps

Based on the above, three 2500 gpm fire pumps, two diesel-driven and one electric-motor-driven, will be installed to pump water from the fire water storage tanks. In addition, the two 2000 gpm diesel-engine-driven pumps that take suction from Lake Michigan will be maintained in order to maintain the capability of obtaining water from Lake Michigan. As a minimum, three of these five pumps must be operable at any given time. One of these three pumps must be a 2500 gpm diesel-engine-driven pump that takes suction off of the fire water storage tanks and one must be a 2000 gpm diesel-engine-driven pump that takes suction off of Lake Michigan. The third pump may be any of the remaining pumps in the system.

The system is designed such that one of three 2500 gpm pumps will start immediately upon a signal that the line pressure is less than 130 psi. If the line pressure cannot be maintained above 130 psi, a second pump will start. This is consistent with NFPA 20 and is an enhancement over our old system due to design simplification.

Two of the 2500 gpm fire pumps can supply enough water for the largest single fire hazard. The third pump is a redundant backup, which allows us to isolate one of the pumps at any given time at its electrical power source.

To maintain the capability of obtaining water from Lake Michigan, two of the existing 2000 gpm diesel-engine-driven lake pumps are being maintained. To preclude the system from becoming infested with zebra mussels, the two lake pumps will be isolated from the rest of the fire protection distribution system by closure of the first isolation valve downstream of the pumps, even during surveillance testing. The water actually pumped by the lake pumps during surveillance testing will be returned to the forebay via a return line. In addition, the automatic initiating instrumentation on the pumps will be removed to preclude inadvertent operation of the pumps. These pumps must be manually started locally.



Fire Piping

The fire pumps discharge into an underground ring header which connects to the plant's existing fire protection underground piping network.

Diesel Fuel Oil Tanks

The existing diesel fuel oil tanks that supply the pumps that take suction from Lake Michigan will be maintained. These tanks are located in the screenhouse.

Each of the newly installed diesel driven pumps will also have its own 250-gallon fuel oil tank. Each of these fuel oil tanks will be located in a room in the newly built fire suppression water system pump house with its associated pump.

General Design Criteria 3 stipulates that no new potential fire hazard will be located in the vicinity of any structures, systems, or components important to safety. As such the pump house is remote from any safety-related equipment, although it is in the restricted area. In addition, to minimize any potential fire hazard that the fuel oil tanks may pose, the walls of the pump house room will be made of three-hour fire rated material.

The existing T/Ss that address diesel fuel oil tank surveillances will be applicable to both the new and the existing diesel fuel oil tanks. As stipulated in the T/Ss, only 160 gallons of fuel need to be contained in each of these tanks.

This is the amount of fuel needed to support pump operation for eight hours, as stipulated in the NFPA codes. As an engineering conservatism the new tanks have been sized to hold 90 gallons of additional fuel.

5.0 NO SIGNIFICANT HAZARDS DETERMINATION

We have evaluated the proposed T/Ss change and have determined that it does not represent a significant hazards consideration based on the criteria established in 10CFR50.92(c). Operation of the Cook Nuclear Plant in accordance with the proposed amendment will not:

(1) Involve a significant increase in the probability or consequences of an accident previously evaluated

The newly installed fire water storage tanks and their three associated pumps will supply enough water and pumping capability to be able to put out the largest single fire hazard even if one of the three pumps fail, which is in accordance with Branch Technical Position APSCB 9.5-1. Maintaining two of the existing pumps that take suction off of Lake Michigan is an added conservatism that results in Cook Nuclear Plant having two completely separate and independent sources of fire suppression water. Consequently, the proposed changes to the Cook Nuclear Plant design and Technical

Specifications will not involve a significant increase in the probability or consequences of an accident previously evaluated.

(2) Create the possibility of a new or different kind of accident from any previously analyzed

The proposed system is designed in accordance with 10CFR50 Appendix A General Design Criterion 3. As such, no new potential fire hazards will be located in the vicinity of any structures, systems, or components important to safety. In addition, the effects of the fire water storage tanks rupturing have been analyzed to ensure that the safety capability of structures, systems, or components important to safety is not impaired.

In addition, by having the two pumps that take suction from Lake Michigan, we will still have a readily available source of fire suppression water in the event that the tanks fail. Consequently, the proposed changes will not create the possibility of a new or different kind of accident from any previously analyzed.

(3) Involve a significant reduction in a margin of safety

The margin of safety was carefully considered in the design of the proposed system. It was realized early in the design process that if we did not maintain the capability to obtain water from the Lake Michigan then the overall margin of safety would be reduced for two reasons.

First, Lake Michigan is essentially an infinite source of water and the tanks are not. Second, if both tanks catastrophically failed, no fire suppression water would exist until an alternate source was established.

The number of pumps is also important to the margin of safety. Although only three pumps are needed to meet the requirements of Branch Technical Position APSCB 9.5-1, a reduction in the number of pumps from four in the existing system to three in the new system would also reduce the margin of safety.

However, zebra mussel infestation of the existing system also poses the potential to reduce the margin of safety. Therefore, it was decided to install a new system with clean water stored in tanks and to also maintain two of the existing diesel-engine-driven lake pumps in the new system design. In this manner we address the zebra mussel problem and maintain the capability of obtaining water from Lake Michigan. We also increase the number of pumps from four in the existing system to five in the new system. By keeping the lake pumps isolated we eliminate any concern that the new portion of the system will become infested with zebra mussels. Periodically starting the lake pumps and flushing their discharge piping per the proposed T/Ss requirements, and chemically treating the pumps and discharge piping will help to ensure that they will be kept operational and free of zebra mussels. By increasing the number of pumps, having diversity in our available water sources, and addressing the zebra mussel problem, we have not only addressed the design issues that may have potentially reduced the margin of safety, but have actually increased the margin of safety.

6.0 PENDING T/Ss PROPOSALS IMPACTING THIS SUBMITTAL

No other requests for changes to the Technical Specifications for Cook Nuclear Plant that are pending NRC review impact this submittal.