UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

COMMONWEALTH EDISON COMPANY

DOCKET NO. 50-237

DRESDEN NUCLEAR POWER STATION, UNIT 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 145
License No. DPR-19

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

   A. The application for amendment by the Commonwealth Edison Company (the licensee) dated September 15, 1995, 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;

   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; and

   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 changes to the Technical Specifications as indicated in the attachment to this license amendment and paragraph 2.C.(2) of Facility Operating License No. DPR-19 is hereby amended to read as follows:

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(2) Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 145, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

3. This license amendment is effective as of the date of its issuance and shall be implemented no later than June 30, 1996.

FOR THE NUCLEAR REGULATORY COMMISSION

John F. Stang

John F. Stang, Senior Project Manager
Project Directorate III-2
Division of Reactor Projects - III/IV
Office of Nuclear Reactor Regulation

Attachment:
Changes to the Technical Specifications

Date of Issuance: December 19, 1995

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

COMMONWEALTH EDISON COMPANY

DOCKET NO. 50-249

DRESDEN NUCLEAR POWER STATION, UNIT 3

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 139
License No. DPR-25

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

   A. The application for amendment by the Commonwealth Edison Company (the licensee) dated September 15, 1995, 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;

   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; and

   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 changes to the Technical Specifications as indicated in the attachment to this license amendment and paragraph 3.B. of Facility Operating License No. DPR-25 is hereby amended to read as follows:

B. Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 139, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

3. This license amendment is effective as of the date of its issuance and shall be implemented no later than June 30, 1996.

FOR THE NUCLEAR REGULATORY COMMISSION

John F. Stang

John F. Stang, Senior Project Manager
Project Directorate III-2
Division of Reactor Projects - III/IV
Office of Nuclear Reactor Regulation

Attachment:
Changes to the Technical Specifications

Date of Issuance: December 19, 1995

ATTACHMENT TO LICENSE AMENDMENT NOS. 145 AND 139

FACILITY OPERATING LICENSE NOS. DPR-19 AND DPR-25

DOCKET NOS. 50-237 AND 50-249

Revise the Appendix A Technical Specifications by removing the pages identified below and inserting the attached pages. The revised pages are identified by the captioned amendment number.

UNIT 2/3 REMOVE*	INSERT
1-5	1-5
1-6	1-6
1-7	1-7
3/4.10-3	3/4.10-3
B3/4.10-1	B3/4.10-1
5-1	5-1
5-2	5-2
5-3	5-3

* The pages to be removed are from the approved TSUP amendment packages.

1.0 DEFINITIONS

PRIMARY CONTAINMENT INTEGRITY (PCI)

PRIMARY CONTAINMENT INTEGRITY (PCI) shall exist when:

a. All primary containment penetrations required to be closed during accident conditions are either:

   1) Capable of being closed by an OPERABLE primary containment automatic isolation valve system, or

   2) Closed by at least one manual valve, blind flange, or deactivated automatic valve secured in its closed position, except for valves that are open under administrative control as permitted by Specification 3.7.D.

b. All primary containment equipment hatches are closed and sealed.

c. Each primary containment air lock is in compliance with the requirements of Specification 3.7.C.

d. The primary containment leakage rates are within the limits of Specification 3.7.B.

e. The suppression chamber is in compliance with the requirements of Specification 3.7.K.

f. The sealing mechanism associated with each primary containment penetration; e.g., welds, bellows or O-rings, is OPERABLE.

PROCESS CONTROL PROGRAM (PCP)

The PROCESS CONTROL PROGRAM (PCP) shall contain the current formulas, sampling, analysis, test, and determinations to be made to ensure that processing and packaging of solid radioactive wastes based on demonstrated processing of actual or simulated wet solid wastes will be accomplished in such a way as to assure compliance with 10 CFR Parts 20, 61, and 71, State regulations, burial ground requirements, and other requirements governing the disposal of solid radioactive waste.

RATED THERMAL POWER (RTP)

RATED THERMAL POWER (RTP) shall be a total reactor core heat transfer rate to the reactor coolant of 2527 MWT.

REACTOR PROTECTION SYSTEM (RPS) RESPONSE TIME

REACTOR PROTECTION SYSTEM (RPS) RESPONSE TIME shall be the time interval for each trip function from the opening of the sensor contact up to and including the opening of the trip actuator.

1.0 DEFINITIONS

REPORTABLE EVENT

A REPORTABLE EVENT shall be any of those conditions specified in Section 50.73 to 10 CFR Part 50.

SECONDARY CONTAINMENT INTEGRITY (SCI)

SECONDARY CONTAINMENT INTEGRITY (SCI) shall exist when:

a. All secondary containment penetrations required to be closed during accident conditions are either:

   1) Capable of being closed by an OPERABLE secondary containment automatic isolation valve system, or

   2) Closed by at least one manual valve, blind flange, or deactivated automatic damper secured in its closed position, except as permitted by Specification 3.7.O.

b. All secondary containment hatches and blowout panels are closed and sealed.

c. The standby gas treatment system is in compliance with the requirements of Specification 3.7.P.

d. At least one door in each access to the secondary containment is closed.

e. The sealing mechanism associated with each secondary containment penetration; e.g., welds, bellows or O-rings, is OPERABLE.

f. The pressure within the secondary containment is less than or equal to the value required by Specification 4.7.N.1.

SHUTDOWN MARGIN (SDM)

SHUTDOWN MARGIN (SDM) shall be the amount of reactivity by which the reactor is subcritical or would be subcritical assuming all control rods are fully inserted except for the single control rod of highest reactivity worth which is assumed to be fully withdrawn and the reactor is in the shutdown condition; cold, i.e. 68°F; and xenon free.

SOURCE CHECK

A SOURCE CHECK shall be the qualitative assessment of CHANNEL response when the CHANNEL sensor is exposed to a radioactive source.

STEADY STATE LINEAR HEAT GENERATION RATE (SLHGR)

The STEADY STATE LINEAR HEAT GENERATION RATE (SLHGR) shall be the limit which protects against exceeding the fuel end-of-life steady state design criteria.

1.0 DEFINITIONS

THERMAL POWER

THERMAL POWER shall be the total reactor core heat transfer rate to the reactor coolant.

TRANSIENT LINEAR HEAT GENERATION RATE (TLHGR)

The TRANSIENT LINEAR HEAT GENERATION RATE (TLHGR) shall be the limit which protects against fuel centerline melting and 1% plastic cladding strain during transient conditions throughout the life of the fuel.

TRIP SYSTEM

A TRIP SYSTEM shall be an arrangement of instrument CHANNEL trip signals and auxiliary equipment required to initiate action to accomplish a protective trip function. A TRIP SYSTEM may require one or more instrument CHANNEL trip signals related to one or more plant parameters in order to initiate TRIP SYSTEM action. Initiation of protective action may require the tripping of a single TRIP SYSTEM or the coincident tripping of two TRIP SYSTEMs.

UNIDENTIFIED LEAKAGE

UNIDENTIFIED LEAKAGE shall be all leakage in the primary containment which is not IDENTIFIED LEAKAGE.

3.10 - LIMITING CONDITIONS FOR OPERATION

B. Instrumentation

At least 2 source range monitor[a] (SRM) CHANNEL(s) shall be OPERABLE and inserted to the normal operating level with:

1. Continuous visual indication in the control room,
2. One of the required SRM detectors located in the quadrant where CORE ALTERATION(s) are being performed and the other required SRM detector located in an adjacent quadrant, and
3. Unless adequate SHUTDOWN MARGIN has been demonstrated per Specification 3.3.A and the "one-rod-out" Refuel position interlock has been demonstrated OPERABLE per Specification 3.10.A, the "shorting links" shall be removed from the RPS circuitry prior to and during the time any control rod is withdrawn[b].

APPLICABILITY:

OPERATIONAL MODE 5, unless the following conditions are met:

1. No more than two fuel assemblies are present in each core quadrant associated with an SRM;

4.10 - SURVEILLANCE REQUIREMENTS

B. Instrumentation

Each of the required SRM channels shall be demonstrated OPERABLE by:

1. At least once per 12 hours:
   a. Performance of a CHANNEL CHECK.
   b. Verifying the detectors are inserted to the normal operating level, and
   c. During CORE ALTERATION(s), verifying that the detector of an OPERABLE SRM CHANNEL is located in the core quadrant where CORE ALTERATION(s) are being performed and another is located in an adjacent quadrant.
2. Performance of a CHANNEL FUNCTIONAL TEST:
   a. Within 24 hours prior to the start of CORE ALTERATION(s), and
   b. At least once per 7 days.
3. Verifying that the channel count rate is at least 3 cps:
   a. Prior to control rod withdrawal,
   b. Prior to and at least once per 12 hours during CORE ALTERATION(s),
   c. At least once per 24 hours.

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a The use of special movable detectors during CORE ALTERATION(s) in place of the normal SRM neutron detectors is permissible as long as these special detectors are connected to the normal SRM circuits.

b Not required for control rods removed per Specification 3.10.I and 3.10.J

3/4.10.A Reactor Mode Switch

Locking the OPERABLE reactor mode switch in the Shutdown or Refuel position, as specified, ensures that the restrictions on control rod withdrawal and refueling platform movement during the refueling operations are properly activated. These conditions reinforce the refueling procedures and reduce the probability of inadvertent criticality, damage to reactor internals or fuel assemblies, and exposure of personnel to excessive radioactivity.

The addition of large amounts of reactivity to the core is prevented by operating procedures, which are in turn backed up by refueling interlocks on rod withdrawal and movement of the refueling platform. When the mode switch is in the Refuel position, interlocks prevent the refueling platform from being moved over the core if a control rod is withdrawn and fuel is on a hoist. If the refueling platform is over the core with fuel on a hoist, control rod motion is blocked by the interlocks. With the mode switch in the refuel position only one control rod can be withdrawn.

3/4.10.B Instrumentation

The OPERABILITY of at least two source range monitors ensures that redundant monitoring capability is available to detect changes in the reactivity condition of the core, whenever reactor criticality is possible.

The source range monitors (SRM) are provided to monitor the core during periods of station shutdown and to guide the operator during refueling operations and reactor startup. Requiring two OPERABLE source range monitors in and adjacent to any core quadrant where fuel or control rods are being moved assures adequate monitoring of that quadrant during such alterations. Requiring a minimum of 3 counts per second whenever criticality is possible provides assurance that neutron flux is being monitored. The SRM system is designed to provide a signal-to-noise ratio of at least 3:1 and a count rate of at least 3 counts per second. Criticality is considered to be impossible if there are no more than two assemblies in a quadrant and if these are in locations adjacent to the source range monitors (i.e., spatially separated).

Special movable detectors may be used during CORE ALTERATION(s) in place of the normal SRM neutron detectors. These special detectors must be connected to the normal SRM circuits such that the applicable neutron flux indication, control rod blocks and scram signals can be generated. The special detectors provide more flexibility in monitoring reactivity changes during fuel loading since they can be positioned anywhere within the core during refueling provided they meet the location requirements of the specification.

When the Reactor Protection System shorting links are removed, the source range monitors provide added protection against local criticalities by providing an initiating signal for a reactor scram on high neutron flux.

5.0 DESIGN FEATURES

5.1 SITE

Site and Exclusion Area

5.1.A The site consists of approximately 953 acres adjacent to the Illinois River at the point where it is formed by the confluence of the Des Plaines and Kankakee Rivers, in the northeast quarter of the Goose Lake Township, Grundy County, Illinois. The Exclusion Area shall not be less than 800 meters from the centerline of the chimney.

Low Population Zone

5.1.B The Low Population Zone shall be a five mile radius from the centerline of the chimney.

Radioactive Gaseous Effluents

5.1.C Information regarding radioactive gaseous effluents shall be located in the OFFSITE DOSE CALCULATION MANUAL.

Radioactive Liquid Effluents

5.1.D Information regarding radioactive liquid effluents shall be located in the OFFSITE DOSE CALCULATION MANUAL.

FIGURE 5.1.A-1

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FIGURE 5.1.B-1

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UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

COMMONWEALTH EDISON COMPANY

AND

MIDAMERICAN ENERGY COMPANY

DOCKET NO. 50-254

QUAD CITIES NUCLEAR POWER STATION, UNIT 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 167
License No. DPR-29

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

   A. The application for amendment by Commonwealth Edison Company (the licensee) dated September 15, 1995, 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;

   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; and

   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 changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 3.B. of Facility Operating License No. DPR-29 is hereby amended to read as follows:

B. Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 167 , are hereby incorporated in the license. The licersee shall operate the facility in accordance with the Technical Specifications.

3. This license amendment is effective as of the date of its issuance and shall be implemented no later than June 30, 1996.

FOR THE NUCLEAR REGULATORY COMMISSION

Robert M. Pulsifer

Robert M. Pulsifer, Project Manager
Project Directorate III-2
Division of Reactor Projects - III/IV
Office of Nuclear Reactor Regulation

Attachment:
Changes to the Technical
Specifications

Date of Issuance: December 19, 1995

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

COMMONWEALTH EDISON COMPANY

AND

MIDAMERICAN ENERGY COMPANY

DOCKET NO. 50-265

QUAD CITIES NUCLEAR POWER STATION, UNIT 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 163
License No. DPR-30

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

   A. The application for amendment by Commonwealth Edison Company (the licensee) dated September 15, 1995, 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;

   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; and

   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 changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 3.B. of Facility Operating License No. DPR-30 is hereby amended to read as follows:

B. Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 163 , are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

3. This license amendment is effective as of the date of its issuance and shall be implemented no later than June 30, 1996.

FOR THE NUCLEAR REGULATORY COMMISSION

Robert M. Pulsifer

Robert M. Pulsifer, Project Manager
Project Directorate III-2
Division of Reactor Projects - III/IV
Office of Nuclear Reactor Regulation

Attachment:
Changes to the Technical Specifications

Date of Issuance: December 19, 1995

ATTACHMENT TO LICENSE AMENDMENT NOS. 167 AND 163

FACILITY OPERATING LICENSE NOS. DPR-29 AND DPR-30

DOCKET NOS. 50-254 AND 50-265

Revise the Appendix A Technical Specifications by removing the pages identified below and inserting the attached pages. The revised pages are identified by the captioned amendment number.

UNIT 1/2

REMOVE*	INSERT
1-5	1-5
1-6	1-6
1-7	1-7
3/4.10-3	3/4.10-3
B3/4.10-1	B3/4.10-1
5-1	5-1
5-2	5-2
5-3	5-3

* The pages to be removed are from the approved TSUP amendment packages.

1.0 DEFINITIONS

PRIMARY CONTAINMENT INTEGRITY (PCI)

PRIMARY CONTAINMENT INTEGRITY (PCI) shall exist when:

a. All primary containment penetrations required to be closed during accident conditions are either:

   1) Capable of being closed by an OPERABLE primary containment automatic isolation valve system, or

   2) Closed by at least one manual valve, blind flange, or deactivated automatic valve secured in its closed position, except for valves that are open under administrative control as permitted by Specification 3.7.D.

b. All primary containment equipment hatches are closed and sealed.

c. Each primary containment air lock is in compliance with the requirements of Specification 3.7.C.

d. The primary containment leakage rates are within the limits of Specification 3.7.B.

e. The suppression chamber is in compliance with the requirements of Specification 3.7.K.

f. The sealing mechanism associated with each primary containment penetration; e.g., welds, bellows or O-rings, is OPERABLE.

PROCESS CONTROL PROGRAM (PCP)

The PROCESS CONTROL PROGRAM (PCP) shall contain the current formulas, sampling, analysis, test, and determinations to be made to ensure that processing and packaging of solid radioactive wastes based on demonstrated processing of actual or simulated wet solid wastes will be accomplished in such a way as to assure compliance with 10 CFR Parts 20, 61, and 71, State regulations, burial ground requirements, and other requirements governing the disposal of solid radioactive waste.

RATED THERMAL POWER (RTP)

RATED THERMAL POWER (RTP) shall be a total reactor core heat transfer rate to the reactor coolant of 2511 MWT.

REACTOR PROTECTION SYSTEM (RPS) RESPONSE TIME

REACTOR PROTECTION SYSTEM (RPS) RESPONSE TIME shall be the time interval for each trip function from the opening of the sensor contact up to and including the opening of the trip actuator.

1.0 DEFINITIONS

REPORTABLE EVENT
A REPORTABLE EVENT shall be any of those conditions specified in Section 50.73 to 10 CFR Part 50.

ROD DENSITY
ROD DENSITY shall be the number of control rod notches inserted as a fraction of the total number of control rod notches. All rods fully inserted is equivalent to 100% ROD DENSITY.

SECONDARY CONTAINMENT INTEGRITY (SCI)
SECONDARY CONTAINMENT INTEGRITY (SCI) shall exist when:

a. All secondary containment penetrations required to be closed during accident conditions are either:

   1) Capable of being closed by an OPERABLE secondary containment automatic isolation valve system, or

   2) Closed by at least one manual valve, blind flange, or deactivated automatic damper secured in its closed position, except as permitted by Specification 3.7.O.

b. All secondary containment hatches and blowout panels are closed and sealed.

c. The standby gas treatment system is in compliance with the requirements of Specification 3.7.P.

d. At least one door in each access to the secondary containment is closed.

e. The sealing mechanism associated with each secondary containment penetration; e.g., welds, bellows or O-rings, is OPERABLE.

f. The pressure within the secondary containment is less than or equal to the value required by Specification 4.7.N.1.

SHUTDOWN MARGIN (SDM)
SHUTDOWN MARGIN (SDM) shall be the amount of reactivity by which the reactor is subcritical or would be subcritical assuming all control rods are fully inserted except for the single control rod of highest reactivity worth which is assumed to be fully withdrawn and the reactor is in the shutdown condition; cold, i.e. 68°F; and xenon free.

SOURCE CHECK
A SOURCE CHECK shall be the qualitative assessment of CHANNEL response when the CHANNEL sensor is exposed to a radioactive source.

1.0 DEFINITIONS

THERMAL POWER

THERMAL POWER shall be the total reactor core heat transfer rate to the reactor coolant.

TRIP SYSTEM

A TRIP SYSTEM shall be an arrangement of instrument CHANNEL trip signals and auxiliary equipment required to initiate action to accomplish a protective trip function. A TRIP SYSTEM may require one or more instrument CHANNEL trip signals related to one or more plant parameters in order to initiate TRIP SYSTEM action. Initiation of protective action may require the tripping of a single TRIP SYSTEM or the coincident tripping of two TRIP SYSTEMs.

UNIDENTIFIED LEAKAGE

UNIDENTIFIED LEAKAGE shall be all leakage which is not IDENTIFIED LEAKAGE.

3.10 - LIMITING CONDITIONS FOR OPERATION

B. Instrumentation

At least 2 source range monitor[a] (SRM) CHANNEL(s) shall be OPERABLE and inserted to the normal operating level with:

1. Continuous visual indication in the control room,

2. One of the required SRM detectors located in the quadrant where CORE ALTERATION(s) are being performed and the other required SRM detector located in an adjacent quadrant, and

3. Unless adequate SHUTDOWN MARGIN has been demonstrated per Specification 3.3.A and the "one-rod-out" Refuel position interlock has been demonstrated OPERABLE per Specification 3.10.A, the "shorting links" shall be removed from the RPS circuitry prior to and during the time any control rod is withdrawn[b].

APPLICABILITY:

OPERATIONAL MODE 5, unless the following conditions are met:

1. No more than two fuel assemblies are present in each core quadrant associated with an SRM;

4.10 - SURVEILLANCE REQUIREMENTS

B. Instrumentation

Each of the required SRM channels shall be demonstrated OPERABLE by:

1. At least once per 12 hours:

   a. Performance of a CHANNEL CHECK.

   b. Verifying the detectors are inserted to the normal operating level, and

   c. During CORE ALTERATION(s), verifying that the detector of an OPERABLE SRM CHANNEL is located in the core quadrant where CORE ALTERATION(s) are being performed and another is located in an adjacent quadrant.

2. Performance of a CHANNEL FUNCTIONAL TEST:

   a. Within 24 hours prior to the start of CORE ALTERATION(s), and

   b. At least once per 7 days.

3. Verifying that the channel count rate is at least 3 cps:

   a. Prior to control rod withdrawal,

   b. Prior to and at least once per 12 hours during CORE ALTERATION(s),

   c. At least once per 24 hours.

---

a The use of special movable detectors during CORE ALTERATION(s) in place of the normal SRM neutron detectors is permissible as long as these special detectors are connected to the normal SRM circuits.

b Not required for control rods removed per Specification 3.10.I and 3.10.J

BASES

3/4.10.A Reactor Mode Switch

Locking the OPERABLE reactor mode switch in the Shutdown or Refuel position, as specified, ensures that the restrictions on control rod withdrawal and refueling platform movement during the refueling operations are properly activated. These conditions reinforce the refueling procedures and reduce the probability of inadvertent criticality, damage to reactor internals or fuel assemblies, and exposure of personnel to excessive radioactivity.

The addition of large amounts of reactivity to the core is prevented by operating procedures, which are in turn backed up by refueling interlocks on rod withdrawal and movement of the refueling platform. When the mode switch is in the Refuel position, interlocks prevent the refueling platform from being moved over the core if a control rod is withdrawn and fuel is on a hoist. If the refueling platform is over the core with fuel on a hoist, control rod motion is blocked by the interlocks. With the mode switch in the refuel position only one control rod can be withdrawn.

3/4.10.B Instrumentation

The OPERABILITY of at least two source range monitors ensures that redundant monitoring capability is available to detect changes in the reactivity condition of the core, whenever reactor criticality is possible.

The source range monitors (SRM) are provided to monitor the core during periods of station shutdown and to guide the operator during refueling operations and reactor startup. Requiring two OPERABLE source range monitors in and adjacent to any core quadrant where fuel or control rods are being moved assures adequate monitoring of that quadrant during such alterations. Requiring a minimum of 3 counts per second whenever criticality is possible provides assurance that neutron flux is being monitored. The SRM system is designed to provide a signal-to-noise ratio of at least 3:1 and a count rate of at least 3 counts per second. Criticality is considered to be impossible if there are no more than two assemblies in a quadrant and if these are in locations adjacent to the source range monitors (i.e., spatially separated).

Special movable detectors may be used during CORE ALTERATION(s) in place of the normal SRM neutron detectors. These special detectors must be connected to the normal SRM circuits such that the applicable neutron flux indication, control rod blocks and scram signals can be generated. The special detectors provide more flexibility in monitoring reactivity changes during fuel loading since they can be positioned anywhere within the core during refueling provided they meet the location requirements of the specification.

When the Reactor Protection System shorting links are removed, the source range monitors provide added protection against local criticalities by providing an initiating signal for a reactor scram on high neutron flux.

5.0 DESIGN FEATURES

5.1 SITE

Site and Exclusion Area

5.1.A The site consists of approximately 784 acres on the east bank of the Mississippi River opposite the mouth of the Wapsipinicon River, approximately three miles north of the village of Cordova, Rock Island County, Illinois. The Exclusion Area shall not be less than 380 meters from the centerline of the chimney.

Low Population Zone

5.1.B The Low Population Zone shall be a three mile radius from the centerline of the chimney.

Radioactive Gaseous Effluents

5.1.C Information regarding radioactive gaseous effluents shall be located in the OFFSITE DOSE CALCULATION MANUAL.

Radioactive Liquid Effluents

5.1.D Information regarding radioactive liquid effluents shall be located in the OFFSITE DOSE CALCULATION MANUAL.

FIGURE 5.1.A-1

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FIGURE 5.1.B-1

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