

March 29, 1993

Docket No. 50-461

Mr. Frank A. Spangenberg
Manager - Licensing and Safety
Clinton Power Station
P. O. Box 678
Mail Code V920
Clinton, Illinois 61727

DISTRIBUTION:

Docket File	G. Hill (2)
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J. Dyer	OC/LFDCB
C. Moore	B. Clayton RIII
D. Pickett	D. Hagan
S. Klementowicz	OGC

Dear Mr. Spangenberg:

SUBJECT: ISSUANCE OF AMENDMENT (TAC NO. M85482)

The U. S. Nuclear Regulatory Commission (Commission) has issued the enclosed Amendment No. 69 to Facility Operating License No. NPF-62 for the Clinton Power Station, Unit No. 1. The amendment is in response to your application dated October 16, 1992 (U-602052), as supplemented on February 17, 1993 (U-602099).

The amendment revises the Clinton Power Station (CPS) Technical Specifications to support compliance with the new requirements of Title 10 of the Code of Federal Regulations, Part 20. These changes are needed to reflect implementation of the CPS Radiation Protection Program in accordance with 10 CFR 20.1101.

A copy of the Safety Evaluation is also enclosed. The Notice of Issuance will be included in the Commission's next biweekly Federal Register notice.

Sincerely,

Original Signed By:

Douglas V. Pickett, Project Manager
Project Directorate III-2
Division of Reactor Projects - III/IV/V
Office of Nuclear Reactor Regulation

Enclosures:

1. Amendment No. 69 to NPF-62
2. Safety Evaluation

cc w/enclosures:
see next page

OFC	LA: PDIII-2	PM: PDIII-2	D: PDIII-2	OGC	
NAME	CMOORE	DPICKETT	JDYER	S. HOM	
DATE	3/24/93	3/29/93	3/29/93	3/18/93	

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

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Sincerely,

A handwritten signature in cursive script that reads "Douglas V. Pickett".

Douglas V. Pickett, Project Manager
Project Directorate III-2
Division of Reactor Projects - III/IV/V
Office of Nuclear Reactor Regulation

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Project Directorate III-2
Division of Reactor Projects - III/IV/V
Office of Nuclear Reactor Regulation

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2. Safety Evaluation

cc w/enclosures:
see next page

OFC	LA: PDIII-2	PM: PDIII-2	D: PDIII-2	OGC
NAME	CMOORE	DPICKETT	JDYER	S. HOM
DATE	3/24/93	3/29/93	3/29/93	3/18/93

Mr. Frank A. Spangenberg
Illinois Power Company

Clinton Power Station
Unit No. 1

cc:

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Vice President
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Chairman of DeWitt County
c/o County Clerk's Office
DeWitt County Courthouse
Clinton, Illinois 61727

Mr. Robert Neumann
Office of Public Counsel
State of Illinois Center
100 W. Randolph, Suite 11-300
Chicago, Illinois 60601



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

ILLINOIS POWER COMPANY
SOYLAND POWER COOPERATIVE, INC.
DOCKET NO. 50-461
CLINTON POWER STATION, UNIT NO. 1
AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 69
License No. NPF-62

1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment by Illinois Power Company* (IP), and Soyland Power Cooperative, Inc. (the licensees) dated October 16, 1992, as supplemented February 17, 1993, 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. NPF-62 is hereby amended to read as follows:

*Illinois Power Company is authorized to act as agent for Soyland Power Cooperative, Inc. and has exclusive responsibility and control over the physical construction, operation and maintenance of the facility.

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(2) Technical Specifications and Environmental Protection Plan

The Technical Specifications contained in Appendix A and the Environmental Protection Plan contained in Appendix B, as revised through Amendment No. 69 , are hereby incorporated into this license. Illinois Power Company shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

3. This license amendment is effective upon issuance, to be implemented April 1, 1993.

FOR THE NUCLEAR REGULATORY COMMISSION



James E. Dyer, Director
Project Directorate III-2
Division of Reactor Projects - III/IV/V
Office of Nuclear Reactor Regulation

Attachment:
Changes to the Technical
Specifications

Date of Issuance: March 29, 1993

ATTACHMENT TO LICENSE AMENDMENT NO. 69

FACILITY OPERATING LICENSE NO. NPF-62

DOCKET NO. 50-461

Replace the following pages of the Appendix "A" Technical Specifications with the attached pages. The revised pages are identified by amendment number and contain vertical lines indicating the area of change. The corresponding overleaf pages, indicated by an asterisk, are provided to maintain document completeness.

<u>Remove Pages</u>	<u>Insert Pages</u>
*1-3	*1-3
1-4	1-4
1-5	1-5
*1-6	*1-6
1-9	1-9
*1-10	*1-10
6-16a	6-16a
*6-16b	*6-16b
6-17	6-17
*6-18	*6-18
*6-21	*6-21
6-22	6-22
6-23	6-23
6-24	6-24
6-25	6-25
*6-26	*6-26
B 3/4 7-3	B 3/4 7-3
*B 3/4 7-4	*B 3/4 7-4

DEFINITIONS

DRYWELL INTEGRITY (Continued)

- d. The drywell leakage rates are within the limits of Specification 3.6.2.2.
- e. The suppression pool is OPERABLE pursuant to Specification 3.6.3.1.
- f. The sealing mechanism associated with each drywell penetration, e.g., welds, bellows or O-rings, is OPERABLE.

E - AVERAGE DISINTEGRATION ENERGY

1.13 \bar{E} shall be the average, weighted in proportion to the concentration of each radionuclide in the reactor coolant at the time of sampling, of the sum of the average beta and gamma energies per disintegration, in MeV, for isotopes, with half lives greater than 15 minutes, making up at least 95% of the total non-iodine activity in the coolant.

EMERGENCY CORE COOLING SYSTEM (ECCS) RESPONSE TIME

1.14 The EMERGENCY CORE COOLING SYSTEM (ECCS) RESPONSE TIME shall be that time interval from when the monitored parameter exceeds its ECCS actuation setpoint at the channel sensor until the ECCS equipment is capable of performing its safety function; i.e., the valves travel to their required positions, pump discharge pressures reach their required values, etc. Times shall include diesel generator starting and sequence loading delays where applicable. The response time may be measured by any series of sequential, overlapping or total steps such that the entire response time is measured.

END-OF-CYCLE RECIRCULATION PUMP TRIP SYSTEM RESPONSE TIME

1.15 The END-OF-CYCLE RECIRCULATION PUMP TRIP SYSTEM RESPONSE TIME shall be that time interval to complete suppression of the electric arc between the fully open contacts of the recirculation pump circuit breaker from initial movement of the associated:

- a. Turbine stop valves and
- b. Turbine control valves.

The response time may be measured by any series of sequential, overlapping or total steps such that the entire response time is measured.

1.16 [DELETED]

DEFINITIONS

FREQUENCY NOTATION

1.17 The FREQUENCY NOTATION specified for the performance of surveillance requirements shall correspond to the intervals defined in Table 1.1.

1.18 DELETED

IDENTIFIED LEAKAGE

1.19 IDENTIFIED LEAKAGE shall be:

- a. Leakage into collection systems, such as pump seal or valve packing leaks, that is captured and conducted to a sump or collecting tank or
- b. Leakage into the drywell atmosphere from sources that are both specifically located and known either not to interfere with the operation of the leakage detection systems or not to be PRESSURE BOUNDARY LEAKAGE.

LIMITING CONTROL ROD PATTERN

1.20 A LIMITING CONTROL ROD PATTERN shall be a pattern which results in the core being on a thermal hydraulic limit, i.e., operating on a limiting value for APLHGR, LHGR, or MCPR.

LINEAR HEAT GENERATION RATE

1.21 LINEAR HEAT GENERATION RATE (LHGR) shall be the heat generation per unit length of fuel rod. It is the integral of the heat flux over the heat transfer area associated with the unit length.

LOGIC SYSTEM FUNCTIONAL TEST

1.22 A LOGIC SYSTEM FUNCTIONAL TEST shall be a test of all logic components, i.e., all relays and contacts, all trip units, solid state logic elements, etc., of a logic circuit from sensor through and including the actuated device to verify OPERABILITY. The LOGIC SYSTEM FUNCTIONAL TEST may be performed by any series of sequential, overlapping or total system steps such that the entire logic system is tested.

1.23 [DELETED]

MEMBER(S) OF THE PUBLIC

1.24 MEMBER(S) OF THE PUBLIC shall be an individual in a controlled or UNRESTRICTED AREA. However, an individual is not a MEMBER OF THE PUBLIC during any period in which the individual receives an occupational dose.

DEFINITIONS

MINIMUM CRITICAL POWER RATIO

1.25 The MINIMUM CRITICAL POWER RATIO (MCPR) shall be the smallest CPR which exists in the core.

OFFSITE DOSE CALCULATION MANUAL (ODCM)

1.26 The OFFSITE DOSE CALCULATION MANUAL (ODCM) shall contain the methodology and parameters used in the calculation of offsite doses resulting from radioactive gaseous and liquid effluents, in the calculation of gaseous and liquid effluent monitoring Alarm/Trip Setpoints, and in the conduct of the Environmental Radiological Monitoring Program. The ODCM shall also contain (1) the Radioactive Effluent Controls and Radiological Environmental Monitoring Programs required by Section 6.8.4 and (2) descriptions of the information that should be included in the Annual Radiological Environmental Operating and Semiannual Radioactive Effluent Release Reports required by Specifications 6.9.1.6 and 6.9.1.7.

OPERABLE - OPERABILITY

1.27 A system, subsystem, train, component or device shall be OPERABLE or have OPERABILITY when it is capable of performing its specified function(s) and when all necessary attendant instrumentation, controls, electrical power, cooling or seal water, lubrication or other auxiliary equipment that are required for the system, subsystem, train, component or device to perform its function(s) are also capable of performing their related support function(s).

OPERATIONAL CONDITION - CONDITION

1.28 An OPERATIONAL CONDITION, i.e., CONDITION, shall be any one inclusive combination of mode switch position and average reactor coolant temperature as specified in Table 1.2.

PHYSICS TESTS

1.29 PHYSICS TESTS shall be those tests performed to measure the fundamental nuclear characteristics of the reactor core and related instrumentation as 1) described in Chapter 14 of the FSAR, 2) as authorized under the provisions of 10 CFR 50.59, or 3) as otherwise approved by the Commission.

PRESSURE BOUNDARY LEAKAGE

1.30 PRESSURE BOUNDARY LEAKAGE shall be leakage through a nonisolable fault in a reactor coolant system component body, pipe wall or vessel wall.

DEFINITIONS

PRIMARY CONTAINMENT INTEGRITY

1.31 PRIMARY CONTAINMENT INTEGRITY 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 containment automatic isolation system or
 2. Closed by at least one manual valve, blind flange, or deactivated automatic valve secured in its closed position, except as provided in Specification 3.6.4.
- b. All primary containment equipment hatches are closed and sealed.
- c. Each primary containment air lock is in compliance with the requirements of Specification 3.6.1.3.
- d. The primary containment leakage rates are within the limits of Specification 3.6.1.2.
- e. The suppression pool is in compliance with the requirements of Specification 3.6.3.1.
- f. The sealing mechanism associated with each primary containment penetration, e.g., welds, bellows or O-rings, is OPERABLE.

PROCESS CONTROL PROGRAM (PCP)

1.32 The PROCESS CONTROL PROGRAM shall contain the current formula, sampling, analyses, tests, and determinations to be made to ensure that the 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 Part 20, 10 CFR Part 61, 10 CFR Part 71 and Federal and State regulations, burial ground requirements and other requirements governing the disposal of the radioactive waste.

PURGE - PURGING

1.33 PURGE or PURGING is the controlled process of discharging air or gas from a confinement to maintain temperature, pressure, humidity, concentration or other operating condition in such a manner that replacement air or gas is required to purify the confinement.

RATED THERMAL POWER

1.34 RATED THERMAL POWER shall be a total reactor core heat transfer rate to the reactor coolant of 2894 Mwt.

DEFINITIONS

TURBINE BYPASS SYSTEM RESPONSE TIME (Continued)

until initial movement of the turbine bypass valve. Either response time may be measured by any series of sequential, overlapping, or total steps such that the entire response time is measured.

UNIDENTIFIED LEAKAGE

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

UNRESTRICTED AREA

1.48 An UNRESTRICTED AREA shall be any area, access to which is neither limited nor controlled by the licensee.

1.49 DELETED

VENTING

1.50 VENTING is the controlled process of discharging air or gas from a confinement to maintain temperature, pressure, humidity, concentration or other operating condition, in such a manner that replacement air or gas is not provided or required during VENTING. Vent, used in system names, does not imply a VENTING process.

TABLE 1.1
SURVEILLANCE FREQUENCY NOTATION

<u>NOTATION</u>	<u>FREQUENCY</u>
S	At least once per 12 hours.
D	At least once per 24 hours.
W	At least once per 7 days.
M	At least once per 31 days.
Q	At least once per 92 days.
SA	At least once per 184 days.
A	At least once per 366 days.
R	At least once per 18 months (550 days).
P	Prior to each release.
S/U	Prior to each reactor startup.
NA	Not applicable.

ADMINISTRATIVE CONTROLS

PROGRAMS

f. Radioactive Effluent Controls Program

A program shall be provided conforming with 10 CFR 50.36a for the control of radioactive effluents and for maintaining the doses to MEMBERS OF THE PUBLIC from radioactive effluents as low as reasonably achievable. The program (1) shall be contained in the ODCM, (2) shall be implemented by operating procedures, and (3) shall include remedial actions to be taken whenever the program limits are exceeded. The program shall include the following elements:

1. Limitations on the operability of radioactive liquid and gaseous monitoring instrumentation including surveillance tests and setpoint determination in accordance with the methodology in the ODCM;
2. Limitations on the concentrations of radioactive material released in liquid effluents to UNRESTRICTED AREAS conforming to ten times the concentration values in 10 CFR Part 20.1001 - 20.2401, Appendix B, Table 2, Column 2;
3. Monitoring, sampling, and analysis of radioactive liquid and gaseous effluents in accordance with 10 CFR 20.1302 and with the methodology and parameters in the ODCM;
4. Limitations on the annual and quarterly doses or dose commitment to a MEMBER OF THE PUBLIC from radioactive materials in liquid effluents released from the unit to UNRESTRICTED AREAS conforming to Appendix I to 10 CFR Part 50;
5. Determination of cumulative and projected dose contributions from radioactive effluents for the current calendar quarter and current calendar year in accordance with the methodology and parameters in the ODCM at least every 31 days;
6. Limitations on the operability and use of the liquid and gaseous effluent treatment systems to ensure that the appropriate portions of these systems are used to reduce releases of radioactivity when the projected doses in a 31-day period would exceed 2 percent of the guidelines for the annual dose or dose commitment conforming to Appendix I to 10 CFR Part 50;
7. Limitations on the dose rate resulting from radioactive material released in gaseous effluents from the site to areas at or beyond the SITE BOUNDARY shall be limited to the following:
 - a. For noble gases: Less than or equal to 500 mrem/yr to the total body and less than or equal to 3000 mrem/yr to the skin, and
 - b. For Iodine-131, for Iodine-133, for tritium, and for all radionuclides in particulate form with half-lives greater than 8 days: Less than or equal to 1500 mrem/yr to any organ;

ADMINISTRATIVE CONTROLS

PROGRAMS

Radioactive Effluent Controls Program (Continued)

8. Limitations on the annual and quarterly air doses resulting from noble gases released in gaseous effluents from each unit to areas beyond the SITE BOUNDARY conforming to Appendix I to 10 CFR Part 50;
9. Limitations on the annual and quarterly doses to a MEMBER OF THE PUBLIC from Iodine-131, Iodine-133, tritium, and all radionuclides in particulate form with half-lives greater than 8 days in gaseous effluents released from the unit to areas beyond the SITE BOUNDARY conforming to Appendix I to 10 CFR Part 50; and
10. Limitations on the annual dose or dose commitment to any MEMBER OF THE PUBLIC due to releases of radioactivity and to radiation from uranium fuel cycle sources conforming to 40 CFR Part 190.

g. Radiological Environmental Monitoring Program

A program shall be provided to monitor the radiation and radionuclides in the environs of the plant. The program shall provide (1) representative measurements of radioactivity in the highest potential exposure pathways, and (2) verification of the accuracy of the effluent monitoring program and modeling of environmental exposure pathways. The program shall (1) be contained in the ODCM, (2) conform to the guidance of Appendix I to 10 CFR Part 50, and (3) include the following:

1. Monitoring, sampling, analysis, and reporting of radiation and radionuclides in the environment in accordance with the methodology and parameters in the ODCM;
2. A Land Use Census to ensure that changes in the use of areas at and beyond the SITE BOUNDARY are identified and that modifications to the monitoring program are made if required by the results of this census; and
3. Participation in an Interlaboratory Comparison Program to ensure that independent checks on the precision and accuracy of the measurements of radioactive materials in environmental sample matrices are performed as part of the quality assurance program for environmental monitoring.

ADMINISTRATIVE CONTROLS

6.9 REPORTING REQUIREMENTS

ROUTINE REPORTS

6.9.1 In addition to the applicable reporting requirements of Title 10, Code of Federal Regulations, the following reports shall be submitted to the Regional Administrator of the Regional Office of the NRC unless otherwise noted.

STARTUP REPORT

6.9.1.1 A summary report of plant startup and power escalation testing shall be submitted following (1) receipt of an Operating License, (2) amendment to the license involving a planned increase in power level, (3) installation of fuel that has a different design or has been manufactured by a different fuel supplier, and (4) modifications that may have significantly altered the nuclear, thermal, or hydraulic performance of the unit.

6.9.1.2 The startup report shall address each of the tests identified in the Final Safety Analysis Report and shall include a description of the measured values of the operating conditions or characteristics obtained during the test program and a comparison of these values with design predictions and specifications. Any corrective actions that were required to obtain satisfactory operation shall also be described. Any additional specific details required in license conditions based on other commitments shall be included in this report.

6.9.1.3 Startup Reports shall be submitted within (1) 90 days following completion of the startup test program, (2) 90 days following resumption or commencement of commercial power operation, or (3) 9 months following initial criticality, whichever is earliest. If the startup report does not cover all three events (i.e., initial criticality, completion of startup test program, and resumption or commencement of commercial operation) supplementary reports shall be submitted at least every 3 months until all three events have been completed.

ANNUAL REPORTS

6.9.1.4 Annual reports covering the activities of the unit as described below for the previous calendar year shall be submitted prior to March 1 of each year. The initial report shall be submitted prior to March 1 of the year following initial criticality.

6.9.1.5 Reports required on an annual basis shall include:

- a. A tabulation on an annual basis of the number of plant, utility, and other personnel (including contractors), for whom monitoring was required, receiving exposures greater than 100 mrem/yr and their associated man-rem exposure according to work and job functions* (e.g., reactor operations and surveillance, inservice inspection, routine maintenance, special maintenance, waste processing, and refuelings). The dose assignments to various duty functions may be

*This tabulation supplements the requirements of §20.2206 of 10 CFR Part 20.

ADMINISTRATIVE CONTROLS

ANNUAL REPORTS (Continued)

estimated based on pocket dosimeter, thermoluminescent dosimeter (TLD), or film badge measurements. Small exposures totalling less than 20% of the individual total dose need not be accounted for. In the aggregate, at least 80% of the total whole-body dose received from external sources should be assigned to specific major work functions:

- b. Documentation of all challenges to safety valves or safety/relief valves, and
- c. Any other unit unique reports required on an annual basis.

The results of specific activity analysis in which the primary coolant exceeded the limits of Specification 3.4.5 should include the following information: (1) Reactor power history starting 48 hours prior to the first sample in which the limit was exceeded; (2) Results of the last isotopic analysis for radioiodine performed prior to exceeding the limit, results of analysis while limit was exceeded and results of one analysis after the radioiodine activity was reduced to less than limit. Each result should include date and time of sampling and the radioiodine concentrations; (3) Clean-up system flow history starting 48 hours prior to the first sample in which the limit was exceeded; (4) Graph of the I-131 concentration and one other radioiodine isotope concentration in microcuries per gram as a function of time for the duration of the specific activity above the steady-state level; and (5) The time duration when the specific activity of the primary coolant exceeded the radioiodine limit.

ANNUAL RADIOLOGICAL ENVIRONMENTAL OPERATING REPORT

6.9.1.6 The Annual Radiological Environmental Operating Report covering the operation of the unit during the previous calendar year shall be submitted before May 1 of each year. The report shall include summaries, interpretations, and analysis of trends of the results of the Radiological Environmental Monitoring Program for the reporting period. The material provided shall be consistent with the objectives outlined in (1) the ODCM and (2) Sections IV.B.2, IV.B.3, and IV.C of Appendix I to 10 CFR Part 50.

ADMINISTRATIVE CONTROLS

MONTHLY OPERATING REPORTS

6.9.1.8 Routine reports of operating statistics and shutdown experience, including documentation of all challenges to the main steam system safety/relief valves, shall be submitted on a monthly basis to the Document Control Desk, U.S. Nuclear Regulatory Commission, Washington, D.C. 20555, with a copy to the Regional Administrator of the Regional Office of the NRC, no later than the 15th of each month following the calendar month covered by the report.

CORE OPERATING LIMITS REPORT

6.9.1.9 Core operating limits shall be established and documented in the CORE OPERATING LIMITS REPORT before each reload cycle or any remaining part of a reload cycle. The analytical methods used to determine the core operating limits shall be those previously reviewed and approved by the NRC in General Electric Standard Application for Reactor Fuel (GESTAR), NEDE-24011-P-A-8, as amended (latest approved version) and Maximum Extended Operating Domain and Feedwater Heater Out-of-Service Analysis for Clinton Power Station, NEDC-31546P, August 1988. The core operating limits shall be determined so that all application limits (e.g., fuel thermal-mechanical limits, core thermal-hydraulic limits, ECCS limits, nuclear limits such as SHUTDOWN MARGIN, and transient and accident analysis limits) of the safety analysis are met. THE CORE OPERATING LIMITS REPORT, including any mid-cycle revision or supplements thereto, for each reload cycle, shall be submitted upon issuance to the NRC Document Control Desk with copies to the Regional Administrator and Resident Inspector.

SPECIAL REPORTS

6.9.2 Special reports shall be submitted to the Regional Administrator of the Regional Office of the NRC within the time period specified for each report.

6.10 RECORD RETENTION

6.10.1 In addition to the applicable record retention requirements of Title 10, Code of Federal Regulations, the following records shall be retained for at least the minimum period indicated.

6.10.2 The following records shall be retained for at least 5 years:

- a. Records and logs of unit operation covering time interval at each power level.
- b. Records and logs of principal maintenance activities, inspections, repair, and replacement of principal items of equipment related to nuclear safety.
- c. All REPORTABLE EVENTS.
- d. Records of surveillance activities, inspections, and calibrations required by these Technical Specifications and the Fire Protection Program.

ADMINISTRATIVE CONTROLS

RECORD RETENTION (Continued)

- e. Records of changes made to the procedures required by Specification 6.8.1.
- f. Records of sealed source and fission detector leak tests and results.
- g. Records of annual physical inventory of all sealed source material of record.

6.10.3 The following records shall be retained for the duration of the unit Operating License:

- a. Records and drawing changes reflecting unit design modifications made to systems and equipment described in the Final Safety Analysis Report.
- b. Records of new and irradiated fuel inventory, fuel transfers, and assembly burnup histories.
- c. Records of doses received by all individuals for whom monitoring was required.
- d. Records of gaseous and liquid radioactive material released to the environs.
- e. Records of transient or operational cycles for those unit components identified in Table 5.7.1-1.
- f. Records of reactor tests and experiments.
- g. Records of training and qualification for current members of the unit staff.
- h. Records of inservice inspections performed pursuant to these Technical Specifications.
- i. Records of quality assurance activities required by the Operational Quality Assurance Manual not listed in Section 6.10.2, which are classified as permanent records by applicable regulations, codes, and standards.
- j. Records of reviews performed for changes made to procedures or equipment or reviews of tests and experiments pursuant to 10 CFR 50.59.
- k. Records of meetings of the FRG and the NRAG.

ADMINISTRATIVE CONTROLS

RECORD RETENTION (Continued)

- l. Records of the service lives of all snubbers including the date at which the service life commences and associated installation and maintenance records.
- m. Records of analyses required by the radiological environmental monitoring program that would permit evaluation of the accuracy of the analysis at a later date. This should include procedures effective at specified times and QA records showing that these procedures were followed.
- n. Records of reviews performed for changes made to the OFFSITE DOSE CALCULATION MANUAL and the PROCESS CONTROL PROGRAM.
- o. Records of radioactive shipments.

6.11 RADIATION PROTECTION PROGRAM

6.11.1 Procedures for personnel radiation protection shall be prepared consistent with the requirements of 10 CFR Part 20 and shall be approved, maintained, and adhered to for all operations involving personnel radiation exposure.

6.12 HIGH RADIATION AREA

6.12.1 In lieu of the "control device" or "alarm signal" required by paragraph 20.1601 of 10 CFR Part 20, each high radiation area in which the intensity of radiation is greater than 100 mrem/hr but less than 1000 mrem/hr shall be barricaded and conspicuously posted as a high radiation area and entrance thereto shall be controlled by requiring issuance of a Radiation Work Permit (RWP).* Any individual or group of individuals permitted to enter such areas shall be provided with or accompanied by one or more of the following:

- a. A radiation monitoring device which continuously indicates the radiation dose rate in the area.
- b. A radiation monitoring device which continuously integrates the radiation dose rate in the area and alarms when a preset integrated dose is received. Entry into such areas with this monitoring device may be made after the dose rate levels in the area have been established and personnel have been made knowledgeable of them.
- c. A health physics qualified individual (i.e., qualified in radiation protection procedures) with a radiation dose rate monitoring device who is responsible for providing positive control over the activities within the area and shall perform periodic radiation surveillance at the frequency specified by the Radiation Protection Supervisor in the RWP.

*Radiation protection personnel or personnel escorted by radiation protection personnel shall be exempt from the RWP issuance requirement for fields of less than 3000 mrem per hour during the performance of their assigned radiation protection duties, provided they are otherwise following plant radiation protection procedures for entry into high radiation areas.

ADMINISTRATIVE CONTROLS

6.12 HIGH RADIATION AREA (Continued)

6.12.2 In addition to the requirements of Specification 6.12.1, areas accessible to individuals with radiation levels such that an individual could receive in 1 hour a dose greater than 1000 mrem* but less than 500 rads at one meter from sources of radioactivity, shall be provided with locked doors to prevent unauthorized entry, and the keys shall be maintained under the administrative control of the Shift Supervisor on duty and/or the Radiation Protection Supervisor. Doors shall remain locked except during periods of access by personnel under an approved RWP.** For areas accessible to individuals with radiation levels such that an individual could receive in 1 hour a dose in excess of 1000 mrem* but less than 500 rads at one meter from sources of radioactivity, that are located within large areas, such as the containment, where no enclosure exists for purposes of locking, and no enclosure can be reasonably constructed around the individual areas, then that area shall be roped off, conspicuously posted, and a flashing light shall be activated as a warning device.

6.12.3 In addition to the requirements of Specifications 6.12.1 and 6.12.2, for areas accessible to individuals such that an individual could receive in 1 hour a dose in excess of 3000 mrem* but less than 500 rads at one meter from sources of radioactivity, entry shall require an approved RWP which will specify dose rate levels in the immediate work area and require that stay times shall be established.

In lieu of the stay time specification of the RWP, continuous surveillance, direct or remote (such as use of closed circuit TV cameras), may be made by personnel qualified in radiation protection procedures to provide positive exposure control over the activities within the area.

6.13 PROCESS CONTROL PROGRAM (PCP)

Changes to the PCP:

- a. Shall be documented and records of reviews performed shall be retained as required by Specification 6.10.3.n. This documentation shall contain:
 1. Sufficient information to support the change together with the appropriate analyses or evaluations justifying the change(s), and
 2. A determination that the change will maintain the overall performance of the solidified waste product to existing requirements of Federal, State, or other applicable regulations.
- b. Shall become effective after review and acceptance by the FRG and the approval of the Manager - Clinton Power Station.

*Measurements made at 30 cm (12 inches) from sources of radioactivity.

**Radiation protection personnel or personnel escorted by radiation protection personnel shall be exempt from the RWP issuance requirement for fields of less than 3000 mrem per hour during the performance of their assigned radiation protection duties, provided they are otherwise following plant radiation protection procedures for entry into high radiation areas.

ADMINISTRATIVE CONTROLS

6.14 OFFSITE DOSE CALCULATION MANUAL (ODCM)

Changes to the ODCM:

- a. Shall be documented and records of reviews performed shall be retained as required by Specification 6.10.3.n. This documentation shall contain:
 1. Sufficient information to support the change together with the appropriate analyses or evaluations justifying the change(s), and
 2. A determination that the change will maintain the level of radioactive effluent control required by 10 CFR 20.1302, 40 CFR Part 190, 10 CFR 50.36a, and Appendix I to 10 CFR Part 50 and not adversely impact the accuracy or reliability of effluent, dose, or setpoint calculations.
- b. Shall become effective after review and acceptance by the FRG and the approval of the Manager - Clinton Power Station.
- c. Shall be submitted to the Commission in the form of a complete, legible copy of the entire ODCM as a part of or concurrent with the Semiannual Radioactive Effluent Release Report for the period of the report in which any change to the ODCM was made. Each change shall be identified by markings in the margin of the affected pages, clearly indicating the area of the page that was changed, and shall indicate the date (e.g., month/year) the change was implemented.

ADMINISTRATIVE CONTROLS

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PLANT SYSTEMS

BASES

3/4.7.4 SNUBBERS (Continued)

etc. . . . The requirement to monitor the snubber service life is included to ensure that the snubbers periodically undergo a performance evaluation in view of their age and operating conditions. These records will provide statistical bases for future consideration of snubber service life. The requirements for the maintenance of records and the snubber service life review are not intended to affect plant operation.

3/4.7.5 SEALED SOURCE CONTAMINATION

The limitations on removable contamination for sources requiring leak testing, including alpha emitters, is based on 10 CFR 70.39(c) limits for plutonium. This limitation will ensure that leakage from byproduct, source, and special nuclear material sources will not exceed allowable intake values. Sealed sources are classified into three groups according to their use, with surveillance requirements commensurate with the probability of damage to a source in that group. Those sources which are frequently handled are required to be tested more often than those which are not. Sealed sources which are continuously enclosed within a shielded mechanism, i.e., sealed sources within radiation monitoring devices, are considered to be stored and need not be tested unless they are removed from the shielded mechanism.

3/4.7.6 MAIN TURBINE BYPASS SYSTEM

The main turbine bypass system is required to be OPERABLE consistent with the assumptions of the feedwater controller failure analysis in FSAR Chapter 15.

3/4.7.7 LIQUID STORAGE TANKS

The tanks listed in this Specification include all those outdoor storage tanks that are not surrounded by liners, dikes, or walls capable of holding the tank contents and that do not have tank overflows and surrounding area drains connected to the liquid radwaste treatment system.

Restricting the quantity of radioactive material contained in each of the specified tanks provides assurance that in the event of an uncontrolled release of the contents from any of these tanks, the resulting concentrations would be less than the limits of 10 CFR Part 20, Appendix B, Table 2, Column 2, at the nearest potable water supply and the nearest surface water supply in an UNRESTRICTED AREA.

PLANT SYSTEMS

BASES

3/4.7.8 MAIN CONDENSER OFFGAS MONITORING

3/4.7.8.1 OFFGAS - EXPLOSIVE GAS MIXTURE

Although there should normally be more than sufficient steam flow to the steam jet air ejectors to ensure adequate dilution of hydrogen (and thus prevent the offgas from attaining hydrogen levels in excess of the flammability limit), this specification is provided to ensure that the concentration of potentially explosive gas mixtures contained in the offgas holdup system is monitored and maintained below the flammability limit of hydrogen. Maintaining the concentration of hydrogen below its flammability limit provides assurance that the releases of radioactive materials will be controlled in conformance with the requirements of General Design Criterion 60 of Appendix A to 10 CFR Part 50.

3/4.7.8.2 OFFGAS - NOBLE GAS RADIOACTIVITY RATE

Restricting the gross radioactivity rate of noble gases from the main condenser provides reasonable assurance that the total body exposure to an individual at the exclusion area boundary will not exceed a small fraction of the limits of 10 CFR Part 100 in the event this effluent is inadvertently discharged directly to the environment without treatment. This specification implements the requirements of General Design Criteria 60 and 64 of Appendix A to 10 CFR Part 50.



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
RELATED TO AMENDMENT NO. 69 TO FACILITY OPERATING LICENSE NO. NPF-62

ILLINOIS POWER COMPANY

SOYLAND POWER COOPERATIVE, INC.

CLINTON POWER STATION, UNIT NO. 1

DOCKET NO. 50-461

1.0 INTRODUCTION

By letter dated October 16, 1992, as supplemented on February 17, 1993, Illinois Power Company (the licensee), submitted proposed changes to the Clinton Power Station Technical Specifications (TS) in support of their plan to implement the new 10 CFR Part 20.

2.0 EVALUATION

The licensee has revised the TS to include wording that is consistent with the revised 10 CFR Part 20, "Standards for Protection Against Radiation," and will retain the same overall level of effluent control required to meet the design objectives of Appendix I to 10 CFR Part 50.

The proposed TS changes and evaluations follow:

1. The licensee has proposed to revise the definitions of MEMBER(S) OF THE PUBLIC, and UNRESTRICTED AREA to conform to the definitions of these terms used in 10 CFR 20.1003.

These changes are administrative in nature to incorporate the corresponding new 10 CFR Part 20 definitions and are considered acceptable.

2. Technical Specification 6.8.4.f is being revised to provide proper references to 10 CFR Part 20 as a result of the new section numbers. Specifically, Specifications 6.8.4.f.2 and 7 are being revised to reference Appendix B, Table 2, as opposed to the currently referenced Table II, and Specification 6.8.4.f.3 is being revised to reference 10 CFR Part 20.1302 as opposed to 10 CFR 20.106.

These changes are administrative in nature to incorporate the corresponding new 10 CFR Part 20 section numbers and table number and are considered acceptable.

3. Note "*" of Technical Specification 6.9.1.5.a is being revised to reference Section 20.2206 vice Section 20.407.

This change is administrative in nature to incorporate the corresponding new 10 CFR Part 20 section number and is considered acceptable.

4. Technical Specification 6.10.2.f is being deleted and moved to 6.10.3.o. The remaining items in Specification 6.10.2 are being relettered as appropriate.

This change is administrative in nature and is considered acceptable.

5. Technical Specification 6.10.3.c is being revised to provide clarification consistent with the requirements in the revised 10 CFR Part 20. Specifically, the revision requires retention of dose records only for those individuals for whom monitoring is required as opposed to all individuals who enter radiation control areas.

This change provides clarification consistent with the requirements of 10 CFR Part 20 and is considered acceptable.

6. Technical Specification 6.12.1 is being revised to reference paragraph 20.1601 vice Section 20.203(c)(2).

This change is administrative in nature to incorporate the corresponding new 10 CFR Part 20 section number and is considered acceptable.

7. Technical Specifications 6.12.2 and 6.12.3 are being revised to provide wording and measurement distances consistent with the definition of high radiation area in 20.1003 and to identify the maximum dose associated with a high radiation area.

The revised 10 CFR Part 20 provides a new definition of a high radiation area which provides controls for areas accessible to individuals based on a radiation level measurement made at 30 cm. The licensee has proposed changes which address the rule's revised wording and the note "***" of TS 6.12.2 and 6.12.3 is being revised to read, "**Measurements made at 30 cm (12 inches) from sources of radioactivity."

The revised 10 CFR Part 20 also requires that additional controls be in place to prevent unauthorized or inadvertent access to very high radiation areas. Very high radiation areas are those areas where radiation levels are 500 rads or more in one hour at one meter from a radiation source. The licensee has revised the TS to acknowledge the new upper limit (<500 rads) on the determination of a high radiation area. This will ensure that the measures which are in place for controlling access to high radiation areas are not used for very high radiation areas which require additional controls.

These changes are administrative in nature, consistent with the requirements of the revised 10 CFR Part 20 and are considered acceptable.

8. Technical Specification 6.14.a.2 is being revised to reference 10 CFR 20.1302 vice 10 CFR 20.106.

This change is administrative in nature to incorporate the corresponding new 10 CFR Part 20 section number and is considered acceptable.

9. The Bases section for Technical Specification 3/4.7.7 is being revised to reference Appendix B, Table 2, vice Table II.

This change is administrative in nature to incorporate the corresponding new 10 CFR Part 20 table number and is considered acceptable.

10. Technical Specification 6.8.4.f.2 is being revised to read as follows:

"2. Limitations on the concentrations of radioactive material released in liquid effluents to UNRESTRICTED AREAS conforming to ten times the concentration values in 10 CFR Part 20.1001 - 20.2401, Appendix B, Table 2, Column 2;"

The licensee has proposed this change in order to retain operational flexibility consistent with 10 CFR Part 50, Appendix I, concurrent with the implementation of the revised 10 CFR Part 20.

The current requirements for the content of the licensee's TS concerning radioactive effluents are contained in 10 CFR 50.36a. Section 50.36a requires licensees to maintain control over radioactive material in gaseous and liquid effluents to unrestricted areas, produced during normal reactor operations, to levels that are as low as reasonably achievable (ALARA). For power reactors, Appendix I to 10 CFR Part 50 contains the numerical guidance to meet the ALARA requirement. The dose values specified in Appendix I of 10 CFR Part 50 are small percentages of the implicit limits in 10 CFR 20.106 and the explicit limits in 10 CFR 20.1301. As secondary controls, the instantaneous dose rates required by this TS were chosen by the staff to keep annual average releases of radioactive material in gaseous and liquid effluents to within the dose values specified in Appendix I of 10 CFR Part 50. For the purpose of this TS, 10 CFR Part 20 is used as a source of reference values only. These TS requirements allow operational flexibility, compatible with considerations of health and safety, which may temporarily result in release rates which, if continued for the calendar quarter, would result in radiation doses higher than specified in Appendix I of 10 CFR Part 50. However, these releases are within the implicit limits in 10 CFR 20.106 and the explicit limits in 10 CFR 20.1302 which references Appendix B, Table II, concentrations. These referenced concentrations in the old 10 CFR Part 20 are specific values

which relate to an annual dose of 500 mrem. The liquid effluent radioactive effluent concentration limits given in Appendix B, Table 2, Column 2 to 10 CFR 20.1001 - 20.2401 are based on an annual dose of 50 mrem total effective dose equivalent. Since a release concentration corresponding to a dose rate of 500 mrem/year has been acceptable as a TS limit for liquid effluents, which applies at all times to assure that the values in Appendix I of 10 CFR Part 50 are not likely to be exceeded, it is not necessary to reduce this limit by a factor of ten.

The licensee states that operational history at the Clinton Power Station has demonstrated that the use of the concentration values associated with 10 CFR 20.106 as TS limits has resulted in calculated maximum individual doses to a member of the public that are small percentages of the values given in Appendix I of 10 CFR Part 50. Therefore, the use of effluent concentration values that are ten times those listed in Appendix B, Table 2, Column 2 to 10 CFR 20.1001 - 20.2401 should not have a negative impact on the ability to continue to operate within the design objectives in Appendix I of 10 CFR Part 50 and 40 CFR Part 190.

Based on the above, it is acceptable that the limits associated with the liquid release rate TS are based on ten times the effluent concentration values given in Appendix B, Table 2, Column 2 to 10 CFR 20.1001 - 20.2401, to apply at all times.

11. Technical Specification 6.8.4.f.7 is being revised to read as follows:

"7. Limitations on the dose rate resulting from radioactive material released in gaseous effluents from the site to areas at or beyond the SITE BOUNDARY shall be limited to the following:

- a. For noble gases: Less than or equal to 500 mrem/yr to the total body and less than or equal to 3000 mrem/yr to the skin, and
- b. For Iodine-131, for Iodine-133, for tritium, and for all radionuclides in particulate form with half-lives greater than 8 days: Less than or equal to 1500 mrem/yr to any organ;"

The licensee has proposed this change in order to retain operational flexibility consistent with 10 CFR Part 50, Appendix I, concurrent with the implementation of the revised 10 CFR Part 20.

The current requirements for the content of the licensee's Technical Specifications (TS) concerning radioactive effluents are contained in 10 CFR 50.36a. Section 50.36a requires licensees to maintain control over radioactive material in gaseous and liquid effluents to unrestricted areas, produced during normal reactor operations, to levels

that are ALARA. For power reactors, Appendix I to 10 CFR Part 50 contains the numerical guidance to meet the ALARA requirement. The dose values specified in Appendix I of 10 CFR Part 50 are small percentages of the implicit limits in 10 CFR 20.106 and the explicit limits in 10 CFR 20.1301. As secondary controls, the instantaneous dose rates required by this specification were chosen by the staff to keep annual average releases of radioactive material in gaseous and liquid effluents to within the dose values specified in Appendix I of 10 CFR Part 50. For purpose of the bases of this TS, 10 CFR Part 20 is used as a source of reference values only. These TS requirements allow operational flexibility, compatible with considerations of health and safety, which may temporarily result in release rates which, if continued for the calendar quarter, would result in radiation doses higher than specified in Appendix I of 10 CFR Part 50. However, these releases are within the limits specified in 10 CFR 20.106 (10 CFR 20.1302).

This specification, which is based on guidance contained in NUREG-0133, is acceptable as a TS limit for gaseous effluents, which applies at all times as an assurance that the values in Appendix I of 10 CFR Part 50 are not likely to be exceeded.

The licensee states that the proposed TS change does not revise the dose rate limits as implemented by the Clinton Power Station Offsite Dose Calculation Manual. Therefore, the use of the proposed TS will not have a negative impact on the ability to continue to operate within the design objectives in Appendix I of 10 CFR Part 50.

Based on the above, it is acceptable that the gaseous release rate TS for radioactive material be based on the stated dose rates.

12. Technical Specification 6.9.1.5.a is being revised to indicate that the annual tabulation of individuals receiving greater than 100 mrem/yr includes only those individuals for whom monitoring was required.

This TS requires a report to be submitted annually which includes a tabulation of individuals receiving exposures greater than 100 mrem/yr and their associated person-rem exposure according to work and job functions. Since the revised 10 CFR Part 20 only requires monitoring for certain individuals as defined in 10 CFR 20.1502, TS 6.9.1.5.a is being revised to clearly identify the individuals who are tabulated in the annual report. This change will not alter any of the licensee's requirements or responsibilities for protection of the public and employees against radiation hazards.

This is an administrative change which provides clarification and consistency among all reporting requirements and is considered acceptable.

3.0 STATE CONSULTATION

In accordance with the Commission's regulations, the Illinois State official was notified of the proposed issuance of the amendment. The State official had no comments.

4.0 ENVIRONMENTAL CONSIDERATION

Pursuant to 10 CFR 51.21, 51.32, and 51.35, an environmental assessment and finding of no significant impact has been prepared and published in the Federal Register on March 29, 1993 (58 FR 16555).

Accordingly, based upon the environmental assessment, the Commission has determined that the issuance of this amendment will not have a significant effect on the quality of the human environment.

5.0 CONCLUSION

The staff has concluded, based on the considerations discussed above, that: (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendment will not be inimical to the common defense and security or to the health and safety of the public.

Principal Contributor: Stephen P. Klementowicz

Date: March 29, 1993