February 20, 1991

Docket No. 50-461

DISTRIBUTION
~~Docket Files~~
PDIII-3 r/f
JHannon
PKreutzer
EJordan
PDIII-3 Gray
JPartlow
TMurley/FMiraglia
BBoger
OC/LFMB
NRC & Local PDRs
JZwolinski
AGody, Jr.
OGC-WF1
ACRS(10)
JWechselberger
CRossi
GHill(4)
GPA/PA

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

Dear Mr. Spangenberg:

SUBJECT: EXEMPTION TO 10 CFR PART 50, APPENDIX J, SECTION III.C.3 (TAC NO. 79378)

The Commission has issued the enclosed Exemption from certain requirements of Appendix J to 10 CFR Part 50 for the Clinton Power Station, Unit 1, in response to your letter dated January 18, 1991. The One Time Exemption permits exclusion of the leakage rates associated with two feedwater system containment isolation check valves from the Local Leak Rate Testing totals until startup from the third refueling outage.

A conforming change to the Clinton Power Station Technical Specifications and the staff's safety evaluation will follow by separate correspondence.

A copy of the enclosed Exemption is being filed with the Office of the Federal Register for publication.

Sincerely,

~~Original signed by~~ Original signed by Stephen P. Sands for:

Anthony T. Gody, Jr., Project Manager
Project Directorate III-3
Division of Reactor Projects III/IV/V
Office of Nuclear Reactor Regulation

Enclosure:
As stated

cc: w/enclosure
See next page

DOCUMENT NAME: EXEMPTION 79378 *See previous concurrence

LA:PD33:DRP345	PM:PD33:DRP345	*BC:PSB:DST	*D:PD33:DRP345
PKreutzer	AGody,Jr./bj	CMcCracken	JHannon
2/15/91	2/19/91	02/12/91	02/12/91

OGC*	*AD:R3:DRP345	DD:DRP345
BBordenick	JZwolinski	BBoger
02/13/91	02/14/91	2/20/91

9103040295 910220
PDR ADOCK 05000461
P PDR

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

February 20, 1991

Docket No. 50-461

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

Dear Mr. Spangenberg:

SUBJECT: EXEMPTION TO 10 CFR PART 50, APPENDIX J, SECTION III.C.3 (TAC NO. 79378)

The Commission has issued the enclosed Exemption from certain requirements of Appendix J to 10 CFR Part 50 for the Clinton Power Station, Unit 1, in response to your letter dated January 18, 1991. The One Time Exemption permits exclusion of the leakage rates associated with two feedwater system containment isolation check valves from the Local Leak Rate Testing totals until startup from the third refueling outage.

A conforming change to the Clinton Power Station Technical Specifications and the staff's safety evaluation will follow by separate correspondence.

A copy of the enclosed Exemption is being filed with the Office of the Federal Register for publication.

Sincerely,

Stephen P. Sands for

Anthony T. Gody, Jr., Project Manager
Project Directorate III-3
Division of Reactor Projects III/IV/V
Office of Nuclear Reactor Regulation

Enclosure:
As stated

cc: w/enclosure
See next page

Mr. Frank A. Spangenberg
Illinois Power Company

Clinton Power Station
Unit No. 1

cc:

Mr. J. S. Perry
Vice President
Clinton Power Station
Post Office Box 678
Clinton, Illinois 67727

Mr. J. A. Miller
Manager Nuclear Station
Engineering Department
Clinton Power Station
Post Office Box 678
Clinton, Illinois 61727

Sheldon Zabel, Esquire
Schiff, Hardin & Waite
7200 Sears Tower
233 Wacker Drive
Chicago, Illinois 60606

Resident Inspector
U.S. Nuclear Regulatory Commision
RR#3, Box 229 A
Clinton, Illinois 61727

Mr. L. Larson
Project Manager
General Electric Company
175 Curtner Avenue, N/C 395
San Jose, California 95125

Regional Administrator, Region III
799 Roosevelt Road, Building 4
Glen Ellyn, Illinois 60137

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

Illinois Department
of Nuclear Safety
Office of Nuclear Facility Safety
1035 Outer Park Drive
Springfield, Illinois 62704

Mr. Donald Schopfer
Project Manager
Sargent & Lundy Engineers
55 East Monroe Street
Chicago, Illinois 60603

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

In the matter of	)	
	)	
ILLINOIS POWER COMPANY AND	)	
SOYLAND POWER COOPERATIVE, INC.	)	Docket No. 50-461
	)	
(Clinton Nuclear Power Station)	)	

EXEMPTION

I.

The Illinois Power Company,* (IP), and Soyland Power Cooperative, Inc. (the licensees), are the holders of Facility Operating License No. NPF-62 (the license) which authorizes operation of the Clinton Power Station, Unit No. 1 (CPS). The license provides, among other things, that it is subject to all rules, regulations and Orders of the Nuclear Regulatory Commission (the Commission) now and hereafter in effect.

The facility consists of a boiling water reactor and other supporting facilities located at the licensee's site in Harp Township, DeWitt County, Illinois.

II.

By letter dated January 18, 1991, IP (the licensee) requested an exemption from the Commission's regulations and applied for an amendment to Operating License No. NPF-62 to change certain provisions of the Technical

---

*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.

Specifications (TSs) for the CPS. The requested exemption is from a requirement in Appendix J to 10 CFR Part 50 which limits the combined leakage rate for all containment penetrations and valves subject to Type B and C tests to 0.60 La. La is defined as the maximum allowable leakage rate at the calculated peak containment internal pressure related to the design basis accident (Pa) as specified for preoperational tests in the technical specifications or associated bases, and for periodic tests in the operating license.

The specific requirement contained in Section III.C.2, "Test pressure," of Appendix J, states that "valves, unless pressurized with fluid (e.g., water, nitrogen) from a seal system, shall be pressurized with air or nitrogen at a pressure of Pa." Additionally, Section III.C.3, "Acceptance Criterion," states in part, that "the combined leakage rate for all penetrations and valves subject to Type B and C tests shall be less than 0.6 La."

The typical CPS feedwater system containment penetration isolation scheme has three containment boundaries in series. Each boundary consists of a check valve in the drywell (1B21-F010A(B)), an air assisted check valve outside containment (1B21-F032A(B)), and two motor operated isolation valves in parallel (1E12-F053A(B) and 1B21-F065A(B)). The 1E12-F053A(B) motor-operated containment isolation valves receive an automatic containment isolation signal and have satisfactorily passed air tests; therefore, these particular valves will be excluded from the following discussion.

The 1B21-F032A(B) feedwater containment isolation check valve (32A(B) check valve) design differs from the 10A(B) check valve design. The 32A(B) check valves utilize a tilting type disc and hardened seat and the 10A(B)

check valves utilize a soft seat arrangement. The soft seat design of the 10A(B) check valves makes this particular design easier to successfully pass air testing. The 32A(B) check valves were subject to extensive rework and satisfactorily passed a 1000 psig water test in accordance with Section XI of the ASME Code during refueling outage number 2 (currently in progress). Rework of these valves has included valve disassembly, relapping the discs and seats, acceptable blue checking of the disk and seat surfaces, verification that bushing clearances are within design tolerances, and replacing the air operator solenoids. However, IP was unable to achieve acceptable air leakage rates for the 32A(B) check valves pursuant to the Appendix J requirement as described above. All the other containment isolation valves in the feedwater penetrations successfully achieved acceptable air leakage rates. The staff has reviewed the licensee's actions to address the 32A(B) check valve problems and concurs with the licensee's decision to develop a more permanent and effective solution.

Solutions to the 32A(B) check valve design problem may include modification of the current design of these check valves to address suitability for air leak tightness. The licensee has requested this one-time exemption to allow sufficient time to evaluate the various design alternatives and adopt the best corrective action.

On this basis, we find that the licensee has made good faith efforts to comply with the regulation and that, based on the licensee's commitment to develop a permanent solution to the identified problem with the 32A(B) check valves by the end of the next refueling outage, it is appropriate to issue

an exemption that would provide only temporary relief from the applicable regulation pursuant to 10 CFR Part 50.12(a)(2)(v).

Three transient/design basis accident analyses as described in the CPS Updated Safety Analysis Report (USAR) are potentially impacted by the licensee's Appendix J exemption request for the 32A(B) check valves. The three postulated scenarios are, (1) Feedwater Line Break Outside Containment, (2) Recirculation Line Break, and (3) Feedwater Line Break Inside Containment. The licensee addressed the three postulated scenarios in its exemption request dated January 18, 1991. In accordance with 10 CFR 50.12(a)(1). the following evaluation demonstrates that this exemption would not present an undue risk to the public health and safety, and is consistent with the common defense and security.

(1) Feedwater Line Break Outside Containment (FLBOC)

In its request, the licensee contends that the air leakage of the 32A(B) check valves would have no impact on the plant response or postulated offsite dose consequences associated with this event. Based on the successful completion of a 1000 psig water test as described above, and the fact that throughout most of this postulated FLBOC scenario, water is maintained on the 32A(B) check valves, the staff agrees with the licensee's contention that the 32A(B) check valves would satisfactorily perform their intended containment isolation function. Therefore, the staff concludes that containment integrity would be adequately maintained for the feedwater penetrations 1MC-009 and 010 during the postulated FLBOC scenario.

(2) Recirculation Line Break (RLB)

As described in the CPS USAR, the postulated instantaneous guillotine rupture of a reactor recirculation line produces the highest peak containment pressure and offsite dose consequences.

Prior to the postulated RLB accident scenario, the feedwater system would be in service providing the normal water supply to the reactor vessel. While feedwater flow is maintained through the feedwater containment penetrations, penetration integrity is maintained primarily due to the presence of feedwater flow. The CPS feedwater system consists of two steam turbine-driven pumps and one motor-driven feedwater pump. Following the postulated RLB, the steam supply to the steam driven feedwater pumps continues until the Main Steam Isolation Valves (MSIVs) receive an isolation signal from lowering reactor water level (group 1 isolation). Once the MSIVs are shut, the steam driven feedwater pumps begin to coast down. Flow through the feedwater penetrations would subsequently begin to decrease to zero unless, of course, feed flow was being provided by the motor-driven pump. If the motor driven feedwater pump was in service at the time of the RLB, operators are trained to keep the feedwater system operating to assist the Emergency Core Cooling System (ECCS) in restoring reactor vessel water level. Additionally, once the feedwater system pressure drops below the discharge pressure of the condensate pumps, operators are trained to utilize the condensate pumps, if available,

for additional reactor makeup from the feedwater system. Operators are trained to secure the feedwater system and remotely close valves 1B21-F065A(B) once the feedwater system is no longer available or not wanted.

Once the 1B21-F065A(B) motor-operated valves are closed, the 1MC-009 and 010 feedwater penetrations have three valve boundaries, two of which have satisfactorily passed the air leakage test described above. Therefore, based on the discussion above, the staff has determined that assurance of public health and safety would be adequately maintained for the postulated RLB scenario.

(3) Feedwater Line Break Inside Containment (FLBIC)

The CPS USAR analysis of the postulated FLBIC accident scenario shows that the pressurization effects of this accident are much less pronounced than the effects of the RLB accident scenario discussed in 2 above. A comparison of the postulated FLBIC accident scenario to the RLB scenario above shows that the RLB evaluation in item (2) above bounds the FLBIC scenario. Therefore, based on the discussion of the RLB scenario above, the staff has determined that assurance of public health and safety would be adequately maintained for the postulated FLBIC scenario.

Based on (1) the discussion above, (2) the licensee's commitment to implement special night orders and training to increase operator awareness regarding closure of the 1B21-F065A(B) valves, (3) the extremely low probability the feedwater penetrations could be in a condition which would rely on the 32A(B) check valves for containment isolation, and (4) the licensee's

commitment to develop a long term design solution to the 32A(B) check valve problem, the staff has determined that satisfactory containment integrity is assured for the next operating cycle.

III.

Accordingly, the Commission has determined that, pursuant to 10 CFR 50.12, an exemption is authorized by law and will not endanger life or property or the common defense and security and is otherwise in the public interest and that special circumstances are present pursuant to 10 CFR 50.12 (a)(2)(v) which states, "the exemption would provide only temporary relief from the applicable regulation and the licensee or applicant has made good faith efforts to comply with the regulation." The Commission hereby grants an Exemption with respect to one of the requirements of 10 CFR Part 50, Appendix J, Section III.C.3:

> The Clinton Power Station, Unit No. 1 Technical Specifications may be revised to allow the exclusion of leakage rates as described in Appendix J to 10 CFR Part 50, Section III.C.3 associated with two feedwater system containment isolation check valves, 1B21-F032A(B), for the operating cycle following the current refueling outage. This Exemption does not alter the existing requirements for any other containment isolation valves.

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 February 19, 1991 (56 FR 6689). 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.

This one-time exemption is effective upon issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

Bruce A. Boger, Director
Division of Reactor Projects III/IV/V
Office of Nuclear Reactor Regulation

Dated at Rockville, Maryland
this 20th day of February 1991