

JUN 15 1971

Docket No. 50-249

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Commonwealth Edison Company
ATTN: Byron Lee, Jr.
Assistant to the President
P. O. Box 767
Chicago, Illinois 60690

Change No. 4
License No. DPR-25

Gentlemen:

We have reviewed your Proposed Change No. 4, dated May 24, 1971, requesting changes to Sections 3.5, 3.6 and 4.5 and to Table 3.7.1 of the Technical Specifications of Facility Operating License No. DPR-25. These proposed changes would update the Technical Specification requirements as a result of plant modification and operating experience and specifically propose additional provisions to (1) assure that the core cooling systems' pump discharge lines are maintained full of water, (2) assure the availability of the core spray system for long-term core cooling capability, and (3) include the drywell pneumatic supply system containment isolation valves.

We have concluded that the proposed changes as modified by discussions with your representatives do not present significant hazards considerations not described or implicit in the safety analysis report and that there is reasonable assurance that the health and safety of the public will not be endangered. Accordingly, the enclosed pages 74, 75, 81, 81A, 83, 85, 86, and Table 3.7.1 are replaced or added to the Technical Specifications.

Sincerely,

ORIGINAL SIGNED BY
Peter A. Morris

Peter A. Morris, Director
Division of Reactor Licensing

Enclosure:
Chg. 4 to the Tech. Spec.

cc: Arthur C. Gehr, Esquire
Isham, Lincoln & Beale
Counselors at Law

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DATE ▶	6/1/71	6/2/71	6/2/71	6/12/71	6/14/71	DW

Commonwealth Edison Company
(Change No. 4 to License No. DPR-25)

JUN 15 1971

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AEC PDR

Docket File (50-249)

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DRL Reading

BWR-2 File

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3.5 LIMITING CONDITION FOR OPERATION

4.5 SURVEILLANCE REQUIREMENT

2. From and after the date that one of the core spray subsystems is made or found to be inoperable for any reason, reactor operation is permissible only during the succeeding seven days unless such subsystem is sooner made operable, provided that during such seven days all active components of the other core spray subsystem and the LPCI subsystem and the diesel generators required for operation of such components if no external source of power were available shall be operable.

* 3. Except as specified in 3.5.A.4, 3.5.A.5 and 3.5.F.3 below, the LPCI subsystem shall be operable whenever irradiated fuel is in the reactor vessel.

c. Core Spray header Δp instrumentation check	Once/day
calibrate	Once/3 months
test	Once/3 months

f. Logic System Functional Test	Each Refueling Outage
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2. When it is determined that one core spray subsystem is inoperable the operable core spray subsystem and the LPCI subsystem and the diesel generators required for operation of such components if no external source of power were available shall be demonstrated to be operable immediately. The operable core spray subsystem shall be demonstrated to be operable daily thereafter.

*

3. LPCI Subsystem Testing shall be as specified in 4.5.A.1.a, b, c, d, and f, except that three LPCI pumps shall deliver at least 14500 gpm against a system head corresponding to a reactor vessel pressure of 20 psig.

3.5 LIMITING CONDITION FOR OPERATION

4. From and after the date that one of the LPCI pumps is made or found to be inoperable for any reason, reactor operation is permissible only during the succeeding thirty days unless such pump is sooner made operable, provided that during such thirty days the remaining active components of the LPCI and containment cooling subsystem and all active components of both core spray subsystems and the diesel generators required for operation of such components if no external source of power were available shall be operable.
5. From and after the date that the LPCI subsystem is made or found to be inoperable for any reason, reactor operation is permissible only during the succeeding seven days unless it is sooner made operable, provided that during such seven days all active components of both core spray subsystems, the containment cooling subsystem (including 2 LPCI pumps) and the diesel generators required for operation of such components if no external source of power were available shall be operable.
6. Containment cooling spray loops are required to be operable when the reactor water temperature is greater than 212°F except that a maximum of one drywell spray loop may be inoperable for thirty days when the reactor water temperature is greater than 212°F.
7. If the requirements of 3.5.A cannot be met, either 3.5.G shall be complied with or an orderly shutdown of the reactor shall be initiated and the reactor shall be in the Cold Shutdown condition within 24 hours.

4.5 SURVEILLANCE REQUIREMENTS

4. When it is determined that one of the LPCI Pumps is inoperable, the remaining active components of the LPCI and containment cooling subsystem, both core spray subsystems and the diesel generators required for operation of such components if no external source of power were available shall be demonstrated to be operable immediately and the operable LPCI pumps daily thereafter.
5. When it is determined that the LPCI subsystem is inoperable, both core spray subsystems, the containment cooling subsystem, and the diesel generators required for operation of such components if no external source of power were available shall be demonstrated to be operable immediately and daily thereafter.
6. During each five year period an air test shall be performed on the drywell spray headers and nozzles.

3.5 LIMITING CONDITION FOR OPERATION

condition will last longer than the periods specified, a report detailing the circumstances and the estimated date for returning the components or systems to an operable condition shall be submitted to the AEC prior to the end of the out-of-service period.

* H. Maintenance of Filled Discharge Pipe

Whenever core spray, LPCI, or HPCI ECCS are required to be operable, the discharge piping from the pump discharge of these systems to the last check valve shall be filled.

4.5 SURVEILLANCE REQUIREMENT

* H. Maintenance of Filled Discharge Pipe

The following surveillance requirements shall be adhered to to assure that the discharge piping of the core spray, LPCI, and HPCI are filled:

1. Every month prior to the testing of the LPCI and core spray systems, the discharge piping of these systems shall be vented from the high point and water flow observed.
2. Following any period where the LPCI or core spray subsystems have not been required to be operable, the discharge piping of the inoperable system shall be vented from the high point prior to the return of the system to service.
3. Whenever the HPCI system is lined up to take suction from the torus, the discharge piping of the HPCI shall be vented from the high point of the system and water flow observed on a monthly basis.

3.5 LIMITING CONDITION FOR OPERATION

4.5 SURVEILLANCE REQUIREMENT

- * 4. The pressure switches which monitor the discharge lines to assure that they are full shall be functionally tested every month and calibrated every three months.

need for core cooling arise. To assure that the remaining core spray and LPCI subsystems and the diesel generators are available they are demonstrated to be operable immediately. This demonstration includes a manual initiation of the pumps and associated valves and diesel generators. Based on judgments of the reliability of the remaining systems; i.e., the core spray and LPCI, a 7-day repair period was obtained.

Should the loss of one LPCI pump occur, a nearly full complement of core and containment cooling equipment is available. Three LPCI pumps in conjunction with the core spray subsystem will perform the core cooling function. Because of the availability of the majority of the core cooling equipment, which will be demonstrated to be operable, a 30-day repair period is justified. If the LPCI subsystem is not available, at least 2 LPCI pumps must be available to fulfill the containment cooling function. The 7-day repair period is set on this basis.

B. Containment Cooling Service Water - The containment heat removal portion of the LPCI/containment cooling subsystem is provided to remove heat energy from the containment in the event of a loss of coolant accident. For the flow specified, the containment long-term

pressure is limited to less than 8 psig and, therefore, is more than ample to provide the required heat removal capability. Ref. Section 5.2.3.2 SAR.

The containment cooling subsystem consists of two sets of 2 service water pumps, 1 heat exchanger and 2 LPCI pumps. Either set of equipment is capable of performing the containment cooling function. Loss of one containment cooling service water pump does not seriously jeopardize the containment cooling capability as any 2 of the remaining three pumps can satisfy the cooling requirements. Since there is some redundancy left a 30-day repair period is adequate. Loss of 1 containment cooling subsystem leaves one remaining system to perform the containment cooling function. The operable system is demonstrated to be operable each day when the above condition occurs. Based on the facts that when one containment cooling subsystem becomes inoperable only one system remains which is tested daily. A 7-day repair period was specified.

C. High Pressure Coolant Injection - The high pressure coolant injection subsystem is provided to adequately cool the core for all pipe breaks smaller than those for which the LPCI or core spray subsystems can protect the core.

The HPCI meets this requirement without the use of off-site electrical power. For the pipe breaks for which the HPCI is intended to function the core never uncovers and is continuously cooled and thus no clad damage occurs. Ref. Section 6.2.5.3 SAR. The repair times for the limiting conditions of operation were set considering the use of the HPCI as part of the isolation cooling system.

Dresden Units 2 and 3 share certain process systems such as the makeup demineralizers and the radwaste system and also some safety systems such as the standby gas treatment system, batteries, and diesel generators. All of these systems have been sized to perform their intended function considering the simultaneous operation of both units.

For the safety related shared features of each plant, the Technical Specifications for that unit contain the operability and surveillance requirements for the shared feature; thus, the level of operability for one unit is maintained independently of the status of the other. For example, the shared diesel (2/3 diesel) would be mentioned in the specifications for both Units 2 and 3 and even if Unit 2 were in the Cold Shutdown Condition and needed no diesel power, readiness of the 2/3 diesel would be required for continuing Unit 3 operation.

- G. Extended Maintenance - Nearly all maintenance can be completed within a few days. Infrequently, however, major maintenance might be required. Replacement of principal system components could necessitate outages of more than the time allowed for a system or component to be out of service.

- * H. Maintenance of Filled Discharge Pipe - If the discharge piping of the core spray, LPCI, and HPCI are not filled, a water hammer can develop in this piping when the pump and/or pumps are started.

Bases:

4.5 The testing interval for the core and containment cooling systems is based on a quantitative reliability analysis, judgment and practicality. The core cooling systems have not been designed to be fully testable during operation. For example the core spray final admission valves do not open until reactor pressure has fallen to 350 psig thus during operation even if high drywell pressure were simulated the final valves would not open. In the case of the HPCI, automatic initiation during power operation would result in pumping cold water into the reactor vessel which is not desirable.

The systems can be automatically actuated during a refueling outage and this will be done. To increase the availability of the individual components of the core and containment cooling systems the components which make up the system; i.e., instrumentation, pumps, valve operators, etc., are tested more frequently. The instrumentation is functionally tested each month. Likewise the pumps and motor-operated valves are also tested each month to assure their operability. The combination

of a yearly simulated automatic actuation test and monthly tests of the pumps and valve operators is deemed to be adequate testing of these systems.

With components or subsystems out-of-service overall core and containment cooling reliability is maintained by demonstrating the operability of the remaining cooling equipment. The degree of operability to be demonstrated depends on the nature of the reason for the out-of-service equipment. For routine out-of-service periods caused by preventative maintenance, etc., the pump and valve operability checks will be performed to demonstrate operability of the remaining components. However, if a failure, design deficiency, etc., caused the out-of-service period, then the demonstration of operability should be thorough enough to assure

that a similar problem does not exist on the remaining components. For example, if an out-of-service period were caused by failure of a pump to deliver rated capacity due to a design deficiency, the other pumps of this type might be subjected to a flow rate test in addition to the operability checks.

* The surveillance requirements to assure that the discharge piping of the core spray, LPCI, and HPCI systems are filled provides for a visual observation that water flows from a high point vent. This ensures that the line is in a full condition. Between the monthly intervals at which the lines are vented, instrumentation has been provided to monitor the presence of water in the discharge piping. This instrumentation will be calibrated on the same frequency as the safety system instrumentation. This period of periodic testing ensures that during the interval between the monthly checks the status of the discharge piping is monitored on a continuous basis.

TABLE 3.7.1

PRIMARY CONTAINMENT ISOLATION

Isolation Group	Valve Identification	Number of Power Operated Valves		Maximum Operating Time (sec)	Normal Position	Action on Initiating Signal
		Inboard	Outboard			
1	Main Steam Line Isolation	4	4	$3 \leq T \leq 5$	O	GC
1	Main Steam Line Drain	1		≤ 35	C	SC
1	Main Steam Line Drain		1	≤ 35	C	SC
1	Recirculation Loop Sample Line	1	1	≤ 5	O	SC
1	Isolation Condenser Vent to main steam line	1		≤ 5	O	GC
1	Isolation Condenser Vent to main steam line		1	≤ 5	O	GC
2	Drywell floor drain		2	≤ 20	O	GC
2	Drywell Equipment drain		2	≤ 20	O	GC
2	Drywell Vent		2	≤ 10	C	SC
2	Drywell Vent Relief		1	≤ 15	C	SC
2	Drywell Inert and purge line		1	≤ 10	C	SC
2	Drywell N ₂ Makeup		1	≤ 15	C	SC
2	Drywell and Suppression Chamber N ₂ Makeup		1	≤ 15	C	SC
2	Suppression Chamber N ₂ Makeup		1	≤ 15	C	SC
2	Suppression Chamber inert and purge		1	≤ 10	C	SC
2	Drywell and Suppression chamber vent from reactor building		1	≤ 10	C	SC
2	Drywell vent to standby gas treatment system		1	≤ 10	C	SC
2	Suppression chamber vent		1	≤ 10	C	SC
2	Suppression chamber vent relief		1	≤ 15	C	SC
2	Drywell air sampling system		10	≤ 5	O	GC
* 2	Drywell Pneumatic Supply Isolation		2	≤ 10	O	GC
3	Cleanup demineralizer System	1		≤ 30	O	GC
3	Cleanup demineralizer System		2	≤ 30	O	GC
3	Shutdown cooling system	2		≤ 40	C	SC
3	Shutdown cooling system		1	≤ 40	C	SC
3	Shutdown cooling system		1	≤ 40	C	SC
3	Reactor head cooling line		1	≤ 15	C	SC
4	HPCI Turbine Steam supply	1		≤ 25	O	GC
4	HPCI Turbine Steam supply		1	≤ 25	O	GC
5	Isolation condenser steam supply	1		≤ 30	O	GC
5	Isolation condenser steam supply		1	≤ 30	O	GC
5	Isolation condenser condensate return	1		≤ 30	O	GC
5	Isolation condenser condensate return		1	≤ 30	C	SC