



**Commonwealth Edison**

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January 6, 1984

Mr. Harold R. Denton, Director  
Office of Nuclear Reactor Regulation  
U.S. Nuclear Regulatory Commission  
Washington, D.C. 20555

SUBJECT: Byron Station Unit 1  
Completion of Pre-Operational  
Test Program  
NRC Docket No. 50-454

Dear Mr. Denton:

This is to inform the NRC of changes in our plans for completion of some of the preoperational tests at Byron 1. Chapter 14 of the Byron/Braidwood FSAR describes the Byron pre-operational and startup Test program. Commonwealth Edison Company's original intentions were to complete the entire pre-operational test program prior to fuel load. However, it has become apparent that testing and post-test reviews of certain portions of a relatively small number of pre-operational tests could become controlling items for fuel load. The delays in completing these tests are due to a variety of design, delivery, and installation problems. To provide a basis for requests for deferral and provide sufficient time for review of these bases, a listing of minimum systems for each of three milestone conditions is attached.

Schedules for the remaining preoperational tests have been reviewed considering both the safety function of individual systems and the anticipated test completion dates. Several of the systems have been determined to have no safety importance during fuel loading and low power testing. This determination is made on the basis of Technical Specification requirements and the absence of fission products and decay heat loads.

Test completion requirements have been established for Fuel Load, Initial Criticality, and Five-Percent Power on the basis of the Technical Specification requirements and that no significant amount of fission products will exist until well after the Five-Percent Power condition is reached. The only accident of any consequence during fuel load is an inadvertent criticality, and the radiological consequences are significantly reduced because no fission product inventory exists. Accidents after Fuel Load and before Five-Percent Power are reduced in severity because no significant amount of decay heat is present. On this basis, it could be argued that none of the ECCS systems are required until Five-Percent Power.

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However, we have elected to complete these systems prior to Initial Criticality because they provide additional sources of boron. The systems designed to deal with radioactive fission products and activation products are not required below Five-Percent Power due to the insignificant inventory of such products.

At each stage, sufficient capability is provided

- (a) for maintaining the reactor in the cold shutdown condition
- (b) to comply with the intent of the facility's Technical Specification.
- (c) to provide the required engineered safety features.
- (d) to provide support for the required accident analyses.
- (e) to process, store, control, or limit the release of radioactive materials.

As outlined in Table 1, systems required for Fuel Load provide equipment to perform the fuel loading operation, monitor the core and water conditions during fuel load, maintain water chemistry, stop an inadvertent criticality accident by increasing boron concentration, and mitigate the consequences of such an accident by providing the capability to establish containment. All of those systems will be tested, the results approved, and the systems released to operating before Fuel Load.

Tables 2 and 3 list individual preoperational tests which need only to be completed prior to Initial Criticality and Five Percent Power, respectively. As can be determined by reference to the "Status" column in these tables, in most cases, physical testing will be completed prior to fuel load. In the majority of cases testing is already complete and the results are being evaluated. A delay in date required for test completion will allow additional time to ensure a thorough evaluation and review of test results and possible retesting, if required.

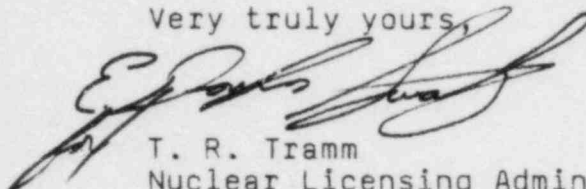
Chapter 14 of the FSAR indicated that several of the startup test abstracts list, as an Initial Condition, "All construction and preoperational testing completed." Approval by the NRC to defer completion of preoperational tests, when requested, is understood to include authorization to deviate from this startup test prerequisite until the specified milestone is attained. A request to amend the Technical Specifications, where necessary, will accompany the request for deferral.

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No specific request for deferral of completion of preoperational tests is being made at this time. The schedules for tests listed in Table 2 and 3 are presently being reviewed to determine which ones will most likely be completely reviewed and approved prior to Fuel Load. A deferral request for the balance of the tests will be submitted within a few days. In the interim, we are available to discuss these lists at the NRC's convenience. Please address questions to this office.

One signed original and fifteen copies of this letter are provided for NRC review.

Very truly yours,

A handwritten signature in dark ink, appearing to read 'T. R. Tramm', is written over the typed name.

T. R. Tramm  
Nuclear Licensing Administrator

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TABLE 1  
SYSTEMS REQUIRED FOR FUEL LOAD

1. Fuel Handling Systems FH and HC:

These systems are required to move fuel to the reactor vessel.

2. Nuclear Instrumentation, NR

This system monitors the load fuel condition with respect to approach to criticality.

3. Area Radiation Monitor, AR

This instrumentation provides a backup monitor for criticality.

4. Residual Heat Removal, RH

Chemical and Volume Control, CV

Boron Recycle, AB

Component Cooling, CC

Essential Service Water, SX

Sampling, PS

RWST

Portions of these systems provide the capability to monitor and adjust the Boric Acid concentration during Fuel Load and in response to indication of an approach to critical. In addition, they provide for heat removal from equipment.

5. Integrated Leak Rate, PC

Demonstrated the containment's ability to contain radiation. Because dilution is a slow accident, and release levels, if any, would be very low, manual isolation is acceptable if required.

6. Control Room Ventilation VC, WO

Containment Purge

Deferral of these systems has already been discussed. Heat Removal is the only consideration necessary for Fuel Load.

7. Auxiliary Building Cubicle Coolers, VA

These coolers provide proper operating conditions for equipment.

3. Industrial Security Systems, IS

Security Diesel Oil, DO

Provide proper security for fuel and plant systems during Fuel Load and Startup.

9. Auxiliary Power, AP

125 V DC Battery, DC

Instrument Power, IP

Parts of these systems provide power for equipment and instrumentation as described above.



TABLE 2  
SYSTEMS REQUIRED FOR INITIAL CRITICALITY

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<u>TEST</u>	<u>JUSTIFICATION</u>	<u>STATUS</u>
3.10 AF Aux. Feedwater	(Tech Spec - Mode 3) No cooling of Steam Generators required because no significant decay heat exists.	Test Complete Approval and Turnover in Progress
5.10 AP Aux. Power	(Tech Spec - Mode 6) Those portions not required to support Fuel Load Systems are not required until Initial Criticality	Test Complete Results Evaluation in Progress
5.11 AP Bus Loading	This bus loading test is not required for any mode.	Test Complete Results Evaluation in Progress
10.10 CC Component Cooling	(Tech Spec - Mode 6) Those portions not required to support Fuel Load Systems are not required until Power Operation.	Test Complete Approval and Turnover in Progress
22.10 DG Diesel Generator	(Tech Spec - Mode 6) No Emergency Power source is required since emergency cooling is not required (no decay heat)	Test Complete Results Evaluation in Progress
24.10 DO Diesel Oil	Diesel Oil Systems for the Emergency Diesels and Aux Feedwater diesels are not required because these diesels are not required.	Test Complete Approval and Turnover in Progress
24.11 DO Diesel Oil	Diesel Oil Systems for the Emergency Diesels and Aux Feedwater diesels are not required because these diesels are not required.	Test Complete Approval and Turnover in Progress
28.10 EM Thermal Exp.	(Tech Spec - Mode 6) There are no fission products. Final verification during initial heatup.	Test Complete Approval and Turnover in Progress

TABLE 2  
SYSTEMS REQUIRED FOR INITIAL CRITICALITY

01/05/84  
0199c

<u>TEST</u>	<u>JUSTIFICATION</u>	<u>STATUS</u>
28.12 EM Pipe Vibration	(Tech Spec - Mode 6) There are no fission products. Final verification during initial heatup.	Test Complete Results Evaluation in Progress
34.10 FW Main Feedwater	(Tech Spec - Mode 4) No heat removal or isolation required beyond that committed for Fuel Load.	Test Complete Results Evaluation in Progress
34.11 FW Main FW Split Flow	(Tech Spec - Mode 4) Not required until 70% power - due to the system design.	Test 0% Complete
51.10 MS Main Steam MSIV's	(Tech Spec - Mode 3) No heat removal or isolation required beyond that committed for Fuel Load.	Test Complete Results Evaluation in Progress
51.11 MS Main Steam PORV's	(Tech Spec - Mode 3) No heat removal or isolation required beyond that committed for Fuel Load.	Test Complete Results Evaluation in Progress
58.10 PC LLRT	(Tech Spec - Mode 6) Containment Isolation only for dilution acci- dent. Long time frame makes manual isolation acceptable.	Test Complete Results Evaluation in Progress
63.10 RC Reactor Cool IHF	(Tech Spec - Mode 6) The Reactor Coolant System is not required to remove decay heat.	Test Complete Results Evaluation in Progress
63.11 RC RC MOV's	(Tech Spec - Mode 6) The Reactor Coolant System is not required to remove decay heat.	Test Complete Results Evaluation in Progress

TABLE 2  
SYSTEMS REQUIRED FOR INITIAL CRITICALITY

01/05/84  
0199c

<u>TEST</u>	<u>JUSTIFICATION</u>	<u>STATUS</u>
63.12 RC RC I&C	(Tech Spec - Mode 6) The Reactor Coolant System is not required to remove decay heat.	Test Complete Results Evaluation in Progress
68.10 RP RP Response Time	(Tech Spec - Mode 5) Lack of Decay Heat makes need for reactor trip function unnecessary until Initial Criticality.	Test Complete Results Evaluation in Progress
68.11 RP RP Log. Test Panel	(Tech Spec - Mode 5) Lack of Decay Heat makes need for reactor trip function unnecessary until Initial Criticality.	Test Complete Results Evaluation in Progress
68.13 RP RP Logic	(Tech Spec - Mode 5) Lack of Decay Heat makes need for reactor trip function unnecessary until Initial Criticality.	Test Complete Results Evaluation in Progress
69.10 RY PRZR	(Tech Spec - Mode 6) Without Decay Heat, over pressure protection is not required.	Test Complete Results Evaluation in Progress
73.10 SI Safety Inj	(Tech Spec - Mode 3) Without Decay Heat, no heat removal is required.	Test Complete Approval and Turnover in Progress
73.11 SI SI Accum.	(Tech Spec - Mode 3) Without Decay Heat, no heat removal is required.	Test Complete Approval and Turnover in Progress
73.12 SI SI Flow Bal.	(Tech Spec - Mode 3) Without Decay Heat, no heat removal is required.	Test Complete Results Evaluation in Progress
73.13 SI Safety Inj.	(Tech Spec - Mode 3) Without Decay Heat, no heat removal is required.	Test Complete Approval and Turnover in Progress



TABLE 2  
SYSTEMS REQUIRED FOR INITIAL CRITICALITY

01/05/84  
0199c

<u>TEST</u>	<u>JUSTIFICATION</u>	<u>STATUS</u>
76.10 SX ESW	(Tech Spec - Mode 6) Without Decay Heat, only those portions required for CV and CC operation are needed before Fuel Load.	Test Complete Results Evaluation in Progress
85.10 VC Cont Rm Vent 2nd Tr	(Tech Spec - Mode 1) The second train is required only as a backup to the first.	Test 50% Complete
86.10 VD D.G. Vent.	(Tech Spec - Mode 6) Since Diesel is not required, Diesel Ventilation is not required.	Test Complete Results Evaluation in Progress
93.10 VP Cnmt. Vent.	(Tech Spec - Mode 4) No heat removal is required from containment, because no fission products exist.	Test Complete Approval and Turnover in Progress
99.10 VX Swgr Heat Rem	(Tech Spec - None) Switchgear heat removal not required because switchgear is not required.	Test Complete Results Evaluation in Progress
128.10 VE Misc Elec Equip Rm HVAC	(Tech Spec - None) Switchgear heat removal not required because switchgear is not required.	Test Complete Results Evaluation in Progress
133.10 LM Loose Parts Mon	(Tech Spec - Mode 2) No Decay Heat. Loose parts not a safety hazard.	Test Complete Approval and Turnover in Progress

TABLE 3  
SYSTEMS REQUIRED FOR FIVE-PERCENT POWER

01/05/84  
0199c

<u>TEST</u>	<u>JUSTIFICATION</u>	<u>STATUS</u>
6.10 AR Area Rad Mon BOP	(Tech Spec - Mode 4) No significant fission products exist - only criticality monitor is required.	Test 0% Complete
6.11 AR Area Rad Mon Lp 1	(Tech Spec - Mode 4) No significant fission products exist - only criticality monitor is required.	Test 0% Complete
6.12 AR Area Rad Mon Lp 2	(Tech Spec - Mode 4) No significant fission products exist - only criticality monitor is required.	Test Complete Results Evaluation In Progress
6.13 AR Area Rad Mon Lp 3	(Tech Spec - Mode 4) No significant fission products exist - only criticality monitor is required.	Test Complete Results Evaluation in Progress
6.14 AR Area Rad Mon Lp 4	(Tech Spec - Mode 4) No significant fission products exist - only criticality monitor is required.	Test Complete Results Evaluation in Progress
6.15 AR Area Rad Mon Lp 5	(Tech Spec - Mode 4) No significant fission products exist - only criticality monitor is required.	Test Complete Results Evaluation in Progress
17.10 CS Cnmt. Spray	(Tech Spec - Mode 4) No heat source, and Reactor Containment Fan Coolers are available.	Test Complete Approval and Turnover in Progress
26.10 EF ESF	(Tech Spec - Mode 4) No Decay Heat, ECCS activation not required.	Test Complete Results Evaluation in Progress
26.11 EF ECCS Full Flow	(Tech Spec - Mode 4) No Decay Heat, ECCS activation not required.	Test Complete Results Evaluation in Progress
26.12 EF ESF Logic	(Tech Spec - Mode 4) No Decay Heat, ECCS activation not required.	Test Complete Results Evaluation in Progress

TABLE 3  
SYSTEMS REQUIRED FOR FIVE-PERCENT POWER

01/05/84  
0199c

<u>TEST</u>	<u>JUSTIFICATION</u>	<u>STATUS</u>
28.11 EM Str. Seismic Mon.	(Tech Spec - Mode 6) Earthquake not a problem if no Decay Heat.	Test Complete Results Evaluation in Progress
31.10 FC Fuel Pool Cooling	(Tech Spec - Mode 1) No Heat Source and no spent fuel to require cooling system.	Test Complete Approval and Turnover in Progress
38.10 GW Radiative Waste Gas	(No Tech Spec Requ) No significant source of radioactive Waste Gas.	Test Complete Results Evaluation in Progress
60.10 PR Proc Rad Mon BOP	(Tech Spec - Mode 4) No significant source of Radioactive Liquids, etc.	Test 0% Complete
60.11 PR Proc Rad Mon Lp 1	(Tech Spec - Mode 4) No significant source of Radioactive Liquids, etc.	Test 0% Complete
60.12 PR Proc Rad Mon Lp 2	(Tech Spec - Mode 4) No significant source of Radioactive Liquids, etc.	Test Complete Results Evaluation in Progress
60.13 PR Proc Rad Mon Lp 3	(Tech Spec - Mode 4) No significant source of Radioactive Liquids, etc.	Test Complete Results Evaluation in Progress
60.14 PR Proc Rad Mon Lp 4	(Tech Spec - Mode 4) No significant source of Radioactive Liquids, etc.	Test Complete Results Evaluation in Progress
60.15 PR Proc Rad Mon Lp 5	(Tech Spec - Mode 4) No significant source of Radioactive Liquids, etc.	Test 0% Complete
60.16 PR Wide Range Gas Mon	(Tech Spec - Mode 4) No significant source of Radioactive Liquids, etc.	Test 0% Complete
61.11 PS H <sub>2</sub> Mon.	(Tech Spec - Mode 3) No significant source of hydrogen in the containment	Test 0% Complete
66.10 RF Cnmt. Flr. Drains	(Tech Spec - Mode 4) No significant source of Radioactive LZquids.	Test 10% Complete

TABLE 3  
SYSTEMS REQUIRED FOR FIVE-PERCENT POWER

01/05/84  
0199c

<u>TEST</u>	<u>JUSTIFICATION</u>	<u>STATUS</u>
94.11 VQ H <sub>2</sub> Recombiner	(Tech Spec - Mode 2) No significant source of hydrogen.	Test 10% Complete