

UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

DOCKETED  
USNRC

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD 160-7 P157

In the Matter of	)	
	)	
TEXAS UTILITIES ELECTRIC	)	Docket Nos. 50-445 and
COMPANY, <u>et al.</u>	)	50-446
	)	
(Comanche Peak Steam Electric	)	(Application for Operating
Station, Units 1 and 2)	)	Licenses)

MOTION FOR AUTHORIZATION TO ISSUE A LICENSE  
TO LOAD FUEL AND CONDUCT CERTAIN PRECRITICAL TESTING

Texas Utilities Electric Company, et al. ("Applicants"), pursuant to 10 C.F.R. 50.57(c), hereby request that the Atomic Safety and Licensing Board authorize the Director of Nuclear Reactor Regulation, upon making findings on all applicable matters specified in 10 C.F.R. §50.57(a), to issue to Applicants a license to load fuel and conduct certain precritical testing activities for Comanche Peak Unit 1. NRC Regulations, 10 C.F.R. §50.57(c), permit Applicants to file the instant motion and, assuming the requisite criteria are met, permit the Board to issue an order authorizing the Director to issue the license sought. The Regulations further provide that the Board should take due regard for the rights of the other parties, "including

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the right of any party to be heard to the extent that his contentions are relevant to the activity to be authorized." 10 C.F.R. 50.57(c).

Applicants submit that the Board should summarily grant this motion because (1) the activities for which authorization is sought will not endanger public health and safety, and (2) the contention which is presently pending before this Board is not relevant to the proposed activities.

I. ACTIVITIES WILL NOT ENDANGER  
PUBLIC HEALTH AND SAFETY

A. Proposed Activities

Applicants emphasize that they do not seek a low-power license, which would permit Comanche Peak Unit 1 to go critical. Applicants now seek only authorization to load fuel and to conduct certain testing that must be completed before initial criticality may be achieved. Such authorization would be without prejudice to further consideration by the Board and the Commission of the application now pending for a full power license.

A description of the proposed activities is presented in the Affidavit of Edward Alarcon, attached hereto. In general, under the authorization sought, Applicants will place 193 unirradiated fuel assemblies and specified control components into the reactor

vessel in a prescribed sequence and thereafter conduct certain mechanical and electrical tests.<sup>1</sup>

B. Safeguards to Prevent  
Inadvertent Criticality

At all times during fuel loading activities, source range nuclear instrumentation will be utilized to monitor the neutron count-rate. For this monitoring the two permanent plant instrument channels are supplemented by two additional temporary monitoring channels supplied by the fuel vendor. These provide accurate indications of the reactivity conditions during the core loading sequence. Alarcon Affidavit, at 9-10.

The first two fuel assemblies loaded contain the neutron sources. As each additional assembly is loaded, the neutron count-rate is monitored to insure that inadvertent criticality is not approached. Once eight fuel assemblies are loaded, meaningful inverse count-rate data for additional fuel insertions can and will be recorded and analyzed. This monitoring will continue until the core is fully loaded. If unanticipated increases occur in the neutron count-rate, fuel loading operations will cease and the cause determined. This careful monitoring process will assure that fuel loading will be conducted in a safe and controlled manner. Alarcon Affidavit, at 10.

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<sup>1</sup> Commencement of fuel loading for Unit 1 is presently scheduled for September 1984, although critical path activities are running about three weeks behind that schedule. It is estimated that the activities to be conducted under the authorization sought will take approximately 117 days. (Alarcon Affidavit, at 1-2.)

During fuel loading, the concentration of boron in the Reactor Coolant System will be maintained between 2000 and 2150 ppm. This will insure that  $K_{eff}$  will be maintained at or below 0.95. Boron concentration of 2000 ppm has been conservatively determined by calculation and previous experience at similar power reactors to assure subcritical conditions. During fuel loading boron concentrations will be checked by chemical analysis at least every four hours. If boron concentration falls below 2000 ppm, fueling operations will cease and additional boron will be injected until the prescribed concentration level is restored. Further, if an incremental decrease in boron concentration of over 20 ppm is detected from one sample analysis to the next, then fueling operation will cease whether or not the concentration falls below 2000 ppm and the cause of the decrease will be determined. Alarcon Affidavit, at 10-11.

During the precritical testing, the concentration of boron likewise will be maintained between 2000 and 2150 ppm. This will assure that sub-criticality is maintained, even in the unlikely event that all control rods are inadvertently fully withdrawn from the core. During precriticality testing, boron concentration will be checked by chemical analysis at least once during every eight hour shift. If boron concentration falls below 2000 ppm, additional boron will be injected. Alarcon Affidavit, at 11.



The alarms and reactor trip functions associated with the Source Range ("SR") Nuclear instrumentation will be in operation during this entire period of fuel loading and precritical testing. This SR instrumentation monitors neutron multiplication while fuel assemblies are loaded into the core and while testing is performed following fuel loading. High SR levels will initiate an alarm and the operator will take appropriate action. If the neutron flux level exceeds  $10^5$  counts per second, then the reactor will trip automatically (Technical Specifications Table 2.2-1). On doubling of neutron counts within a short increment of time, the flux doubling monitor will also automatically isolate potential boron dilution paths. This instrumentation provides an additional safeguard to insure that inadvertent criticality is not achieved. Alarcon Affidavit, at 11-12.

Fuel loading activities will be conducted by licensed operators under the direction and supervision of a licensed senior reactor operator ("SRO") trained in fuel transfer. The SRO will have no other concurrent responsibilities. This SRO will direct core loading from the operating floor of the Reactor Building. Another SRO will be on site at all times during fuel loading, and a licensed reactor operator will be in the Control Room at all times during and following core loading. Alarcon Affidavit, at 12.

Fuel loading activities and precritical testing will be directed by the Initial Startup ("ISU") group. The ISU group consists of an ISU Coordinator and qualified test engineers who have been specifically trained for this function. The ISU group also possesses significant experience in initial startup of nuclear power reactors. The test engineers will provide continuous on-shift direction of the fuel loading and precritical testing activities. The ISU Coordinator is responsible to the Engineering Superintendent and Results Engineer for the implementation of fuel loading and precritical testing. Alarcon Affidavit, at 12.

Westinghouse, the supplier and designer of the nuclear fuel and the nuclear steam supply system, will provide personnel with relevant experience to the site organization during fuel loading and precritical testing. These personnel will provide technical guidance and advice during fuel loading and precritical testing activities. Alarcon Affidavit, at 12-13.

These controls and safeguards, and the levels of experience and qualifications that these operators and engineers possess, provide a high degree of assurance that fuel loading and precritical testing will be conducted safely and efficiently. Alarcon Affidavit, at 13.

C. No Significant Risk to  
Public Health and Safety

There will be no significant risk to public health and safety occasioned by these proposed activities. Fundamentally, the public health and safety can be at risk from nuclear power reactor activities only when fission products can be released to the environment. Fission products are the by-products of the fission process which occurs in the core after criticality. Critical operation at significant power levels is required to generate enough fission products to be hazardous. Alarcon Affidavit, at 13.

Under the authorization requested here, Comanche Peak Unit 1 will not be allowed to become critical (in fact it will be shut down by a margin of at least 5%), much less develop any power history. No significant radioactive fission products will be contained in the reactor core or systems at CPSES during the contemplated activities. Thus, systems that prevent or mitigate the consequences of postulated accidents, while operable and available, need not be called upon to function. In addition, decay heat removal will not be required since there will be no fission product to decay. In the unlikely event that all cooling is lost, plant safety and pressure boundary integrity will not be compromised. The non-nuclear heat input to the system can be stopped by merely turning off pumps and heaters. Therefore,

initial fuel loading and precritical test activities clearly pose no threat to the health and safety of the public. Alarcon Affidavit, at 13-14.

It is beyond valid dispute that these activities in and of themselves do not pose a potential threat to the public health and safety. The Commission itself has found that

"[t]he risk to public health and safety from fuel loading and pre-criticality testing is extremely low since no self-sustaining nuclear chain reaction will take place under the terms of the license and therefore no radioactive fission products will be produced." [Pacific Gas & Electric Company (Diablo Canyon Nuclear Power Plant, Units 1 and 2), CLI-83-27, 18 NRC 1146, 1149 (1983).]

The Commission's conclusion in Diablo Canyon that the risks are extremely low for conduct of fuel loading and precritical testing activities is directly applicable in this instance.

Further, when faced in Diablo Canyon with a request for hearings concerning that applicant's request to load fuel and conduct precriticality testing, the Commission denied the request because it explicitly found no significant safety issues were presented:

Since there are no significant safety issues material to fuel loading and pre-criticality testing, and there will be no prejudice to future Commission decisions, a consideration of the equities favors denial of the Joint Intervenors' request to defer the decision on the licensee's request for reinstatement and extension of the licensee to load fuel and conduct pre-criticality testing pending the holding of a hearing on the licensee's request. [Id. at p. 6.]



Therefore, Applicants maintain that the instant motion for authorization to load fuel and conduct precritical testing can be decided by the Board summarily, and that no need exists for a hearing on the motion.

More recently, the Licensing Board in Catawba, in response to a motion seeking the same authorization sought by Applicants here, authorized the Director of Nuclear Reactor Regulation to issue to the applicant there a license to load fuel and conduct certain precriticality testing. Duke Power Company (Catawba Nuclear Station, Units 1 and 2), Memorandum and Order (May 30, 1984). Although several safety contentions (including a broad quality assurance contention) before the Catawba Board remained unresolved at that time, the intervenors acknowledged that the proposed activities would not pose any "technical threat to the public health and safety" and did not oppose the conduct of those activities. Memorandum and Order, at 1-2. The Catawba Board found that the proposed fuel loading and precriticality testing posed no significant risk to public health and safety. The Director issued the license on July 18, 1984. Catawba Facility Operating License NPF-24 (July 18, 1984).

There is no material difference between the activities for which authorization is sought in the instant motion and the activities authorized in Diablo Canyon and Catawba. Accordingly, based upon the facts presented in the Alarcon Affidavit and in

view of the precedent in Diablo Canyon and Catawba directly on point, the Board should find, summarily, that the proposed activities pose no significant risk to public health and safety.

II. PENDING CONTENTION NOT  
RELEVANT TO PROPOSED ACTIVITIES

Upon finding that the proposed activities in Catawba posed no significant risks, the Board there concluded on the basis of that finding that "the admitted contentions in this proceeding are not relevant to such activities." Catawba Memorandum and Order, at 3. Significantly, one of the contentions remaining before the Catawba Board at that time was a challenge to the adequacy of the applicant's quality assurance program.

Likewise, once having found that the proposed activities pose no significant risks to public health and safety, this Board should find that the quality assurance contention now pending before it is not relevant to those activities. Safety systems that prevent or mitigate the consequences of postulated accidents need not be called upon to function during initial fuel loading and precritical testing. Alarcon Affidavit, at 14. It is for these safety systems that 10 C.F.R. Part 50, Appendix B, establishes quality assurance requirements for design, construction and operation. Thus, the contention on quality assurance as it applies to these safety systems is irrelevant.

The Commission recognized this logic in the Diablo Canyon case involving that applicant's request to load fuel and perform precritical testing. The Commission was faced there with an open hearing record on issues pertaining to, inter alia, design and construction quality assurance and an Independent Design Verification Program. In denying the intervenor's requests for a hearing, the Commission observed as follows:

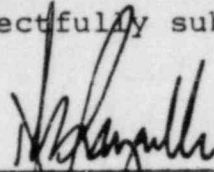
"A review of the pleadings on Joint Intervenors' two hearing requests reveals no significant safety concerns material to fuel loading and pre-criticality testing. This should not be surprising since the IDVP and related efforts focus on plant systems engineered to handle the hazards associated with radioactive fission products and, as stated above, no such fission products will be produced." [Pacific Gas & Electric Company (Diablo Canyon Nuclear Power Plant, Units 1 and 2), supra, CLI-83-27, 18 NRC at 1149 (emphasis added).]

### III. CONCLUSION

For the reasons set forth above, and in view of Commission precedent and practice implementing 10 C.F.R. §50.57(c), Applicants respectfully request that the Board grant the instant motion and authorize the Director of Nuclear Reactor Regulation

to issue Applicants authorization to permit the loading of fuel and the conduct of certain precritical testing at Comanche Peak, Unit 1.

Respectfully submitted,



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