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AUTH.NAME AUTHOR AFFILIATION
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RECIP.NAME RECIPIENT AFFILIATION
Office of Nuclear Reactor Regulation, Director (Post 870411

SUBJECT: Requests short-term exemption from schedular requirements of 10CFR55.45(b)(2)(iii) to defer submission of NRC Form 474, "Simulation Facility Certification" for plant-referenced simulation facility from 910326 to 910524.

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10 CFR 55.11

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WILLIAM F. CONWAY
EXECUTIVE VICE PRESIDENT
NUCLEAR

161-03718-WFC/GEC
January 25, 1991

Docket Nos. STN 50-528/529/530

Director of Nuclear Reactor Regulation
U. S. Nuclear Regulatory Commission
Washington, DC 20555

Dear Sir:

Subject: Palo Verde Nuclear Generating Station (PVNGS)
Units 1, 2, and 3
Request for Exemption from 10 CFR 55.45(b)(2)(iii)
File: 91-056-026

Arizona Public Service Company (APS), pursuant to 10 CFR 55.11, hereby requests a short-term exemption from the schedular requirements of 10 CFR 55.45(b)(2)(iii) to defer the submission of NRC Form 474, "SIMULATION FACILITY CERTIFICATION" for the PVNGS plant-referenced simulation facility from March 26, 1991, to May 24, 1991. APS is not requesting an exemption from the requirements of 10 CFR 55.45(b)(2)(iv) at this time. APS believes that the deferral of submission of the simulator certification will not impact the conduct of operating tests in accordance with NRC requirements. APS' intention to submit this request was discussed in telephone conversations with Charles Trammell of the NRC Headquarters staff and Lewis Miller of the Region V Office on January 22 and 25, 1991, respectively.

APS intends to comply with 10 CFR 55.45(b) by certification of our plant-referenced simulation facility in accordance with 10 CFR 55.45(b)(5)(i). The simulator is presently being upgraded to meet the requirements of § 55.45(b). It is anticipated that the upgrade project will be complete in March 1991. The attachment to this letter includes a description of the events and decisions leading to the awarding of a simulator upgrade contract in September 1989, description of progress on the PVNGS Simulator Project, and additional supporting information. This information is being submitted to demonstrate the good faith effort of APS to comply with the regulations (consistent with the requirement in 10 CFR 50.12 that special circumstances be present).

At the present time, we believe we will be able to submit the certification by March 26, 1991, in accordance with the time requirements of 10 CFR 55.45(b)(2)(iii). However, there is a possibility that the required modifications and performance testing

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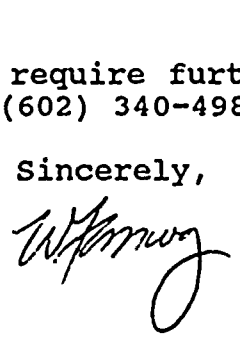
may not be completed in time to support submittal of the certification by that date. It is estimated that the Project is currently about 15 days behind schedule. Acceptance Testing started on schedule on September 4, 1990, but now is estimated to be completed by March 15, 1991, rather than the originally scheduled March 1. We are concerned that if any further problems are encountered, we will be unable to complete preparation of the certification documentation by March 26, 1991.

Utilizing the guidance of Generic Letter 90-08, "Simulation Facility Exemptions," we are submitting this request for a short-term exemption from the schedular requirements at this time as a contingency to preclude the possibility of being in violation of this regulation in the event that all requirements leading to certification have not be completed by March 26, 1991.

As the NRC discussed in the Supplementary Information published along with the final rule, in unique circumstances, deviation from the time requirements established by the rule would be permitted. Under the existing circumstances, where APS has made a good faith effort to comply in a timely manner with regulatory requirements and otherwise intends to fully comply with 10 CFR 55.45(b), this exemption should be granted.

If you have any questions or require further information, please contact Michael E. Powell at (602) 340-4981.

Sincerely,



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Attachment

cc: Document Control Desk
D. F. Kirsch
L. F. Miller
D. H. Coe
A. C. Gehr
A. H. Gutterman

ATTACHMENT

PALO VERDE NUCLEAR GENERATING STATION (PVNGS)

SIMULATOR CERTIFICATION SCHEDULAR EXEMPTION REQUEST

SUPPORTING INFORMATION

January 25, 1991

INTRODUCTION:

The Arizona Public Service Company (APS), pursuant to 10 CFR 55.11, is requesting a short-term exemption from the schedular requirements of 10 CFR 55.45(b)(2)(iii) to defer the submission of NRC Form 474, "SIMULATION FACILITY CERTIFICATION" for the Palo Verde Nuclear Generating Station (PVNGS) plant-referenced simulator from March 26, 1991, to May 24, 1991. Supporting information for this exemption request, including a discussion of the background and current status of the PVNGS Simulator Upgrade Project, is included in this attachment.

APS is not requesting an exemption from the requirements of 10 CFR 55.45(b)(2)(iv) at this time. APS believes that the deferral of submission of the simulator certification will not impact conduct of operating tests in accordance with NRC requirements.

BACKGROUND:

The PVNGS Control Room Training Simulator became operational in October 1980, approximately four years before issuance of the Unit 1 operating license. The Simulator had been used for several years to conduct operator training and administer operating tests at PVNGS before the adoption of 10 CFR 55.45 in May 1987. Numerous design changes have been implemented in PVNGS Unit 1 (the reference unit) over the past 10 years. After the simulator became operational, an ongoing effort of simulator upgrades was undertaken to incorporate these plant modifications as they occurred, to keep the existing panels configured to their reference, and to incorporate the Unit 1 plant operating characteristics into the simulator with a stated goal to ensure that the simulator reflected the operating unit, attained simulator fidelity, and achieved certification. This in-house simulator upgrade program incorporated many improvements into the simulator and advanced the simulator toward certification.

In early 1989, APS assigned a dedicated Project Manager to review and assess the status of the PVNGS Simulator and the ongoing effort to assure that Certification of the PVNGS Simulator by March 26, 1991 could be achieved. This began an intensive evaluation of the current simulator panels, software, and computer hardware utilizing a multi-disciplined team comprised of APS personnel, expert consulting personnel, and included the assessment by four simulator vendors (Combustion Engineering, S3 Technologies, General Physics, and Westinghouse). The conclusion of the team was that the most effective avenue to ensure certification in accordance with 10 CFR 55.45 was to employ an outside contractor to perform the work.

On September 28, 1989, Arizona Public Service Company (APS) awarded a Contract to S3 Technologies (formerly Singer Link-Miles Simulation Corporation) to upgrade the Palo Verde Control Room Training Simulator.

S3 Technologies was selected for the following reasons:

- It was the most experienced nuclear power plant simulator manufacturer;
- It had recent experience manufacturing a simulator for a Combustion Engineering designed plant (Waterford);
- It provides state-of-the-art simulation technology;
- The services to be provided would result in improvements to the simulator beyond those required to meet Certification. In addition, the proposed Project schedule would permit a limited amount of contingency time to allow for slippage in performance due to unforeseen circumstances.

SIMULATOR UPGRADE SCHEDULE:

The original schedule for the Project identified a scheduled completion date of March 21, 1991 for APS submittal of NRC Form 474 to the NRC. To support this schedule, the Simulator Upgrade Project was divided into three primary phases:

Phase 1: Fidelity Improvements, extending approximately from 10/01/89 to 07/01/90

Phase 2: Simulation Software Replacement, extending approximately from 10/01/89 to 03/01/91

Phase 3: Certification Program, extending approximately from 11/15/89 to 03/01/91

The project was designed in phases to provide improvements in the fidelity of the simulation as rapidly as possible in order both to support on-going simulator training programs and to carry the improvements forward into the final simulator design for certification.

A detailed Project schedule with contractual milestones was developed to continually monitor and track project progress. Project progress is monitored at several management levels. In addition to the day-to-day involvement of APS and S3 Technologies project management, weekly status briefings are presented to the APS Executive Vice President, Nuclear. Formal monthly meetings are held between the APS and S3 Technologies project teams and the appropriate management personnel from each organization. The APS Executive Vice President, Nuclear, and S3 Technologies President and General Manger conduct quarterly management review meetings. To supplement these management reviews, a consultant to APS (who is a member of the ANSI/ANS 3.5 Committee) performs independent

progress assessments. On a quarterly basis, the consultant evaluates the milestone status, analyzes project progress, and identifies any potential problems with the completion of any individual milestone. Executive management representatives meet frequently to ascertain project status and discuss mechanisms appropriate to enhancing schedule completion.

In order to achieve simulator certification by March 26, 1991, extensive simulator time has been contractually allocated to the vendor.

DAILY ALLOCATION OF SIMULATOR TIME TO SIMULATOR UPGRADE VENDOR

DATES	TRAINING TIME (Hours/Day)	VENDOR TIME (Hours/Day)
September 28, 1989 through February 28, 1990	16	8
March 1, 1990 through September 30, 1990	12	12
October 1, 1990 through March 31, 1991	4	20

The allocation of the majority of the available simulator time to the Simulator Upgrade Project was deemed necessary to further ensure the on-time completion of the project to support certification.

In addition to the original simulation computer, a second computer system was installed in July 1989 to support software development and fidelity improvements. A third computer system was installed in December 1989 for the certification program. However, the computer complex originally planned for the PVNGS Simulator proved inadequate due to the large size of the simulation system models and a very extensive plant process computer simulation. Two subsequent upgrades have been required to provide adequate computer resources.

The dedicated APS Project Team was established and has been augmented as necessary to assist in completing Project activities. However, S3 Technologies experienced unexpected problems early in the Project in obtaining experienced staff that were willing to spend up to 19 months in the Arizona area. This was coupled with the resignation of some key engineers at the beginning of the Project.

CURRENT STATUS:

The Software Replacement and Certification Phases, which include Acceptance Testing, is approximately 15 days behind schedule. Significant items contributing to early delays are discussed in the section above. In addition, during acceptance testing, some unexpected computer system hardware and software problems occurred which required experts from S3 Technologies and Encore (the computer manufacture) to be brought in to isolate and correct these problems which were delaying the testing phase of the Project.

Each of these unforeseen circumstances have effectively consumed portions of the limited amount of contingency time that had been built into the Project schedule. Acceptance Testing started on schedule on September 4, 1990, but now is estimated to be completed March 15, 1991, rather than the originally scheduled March 1. In parallel with final testing, the collection and completion of data and the preparation of Form 474 must be completed. The currently scheduled date for completion of these efforts is March 15, 1991.

ACTIVITIES REMAINING TO BE ACCOMPLISHED PRIOR TO CERTIFICATION:

The principal activities remaining to be accomplished prior to completing the certification of the PVNGS Simulator consist of:

1. Completion of testing required to support Certification,

2. Correction of simulator deficiencies identified by that testing, and

3. Compilation and submittal of the data and Form 474 to document certification.

Major milestones supporting completion of certification include:

- Completion of malfunction testing: February 13;
- Completion of transient testing: February 18;
- Completion of final startup and shutdown testing: February 28;
- Resolution of deficiencies and completion of final testing: March 15; and
- Completion of certification and submittal of NRC Form 474 and supporting information to the NRC: March 26, 1991.

If no further unforeseen problems arise, APS expects to submit Form 474 and certify the PVNGS Simulator to the NRC by the March 26, 1991 deadline. However, should acceptance testing uncover problems

which require remedy or should be remedied prior to certification or should significant hardware problems occur, APS may need the additional time requested to complete certification.

APS EFFORTS TO MEET MARCH 26, 1991, CERTIFICATION DEADLINE:

APS has assigned additional operations personnel to expedite the test program. Twenty hours per day of simulator time have been made available to support the engineering and testing efforts focused on completing the simulator upgrade. The remaining four hours per day of simulator time is used to conduct the minimum simulator training required for the on-going operator training programs. Operators and engineers from the Project have been assigned to all shifts to ensure maximum utilization of the available time for the Project.

S3 Technologies has placed additional engineers on-site to resolve any problems as rapidly as possible to maintain the testing schedule. Personnel with specific expertise are on call to quickly resolve problems beyond the capabilities of the on-site staff.

Increased emphasis is being placed on detailed work plans to strengthen the coordination of activities between the various APS groups to expedite the development of the certification package. These include Licensing, the Configuration Management Team, and Simulator Support staff.

IMPACT ON OPERATOR TESTING:

The next Training Cycle, which is for Initial License Training, begins on February 18, 1991. We expect that the improved software will be available to carry out the first objective of performing a plant startup and shutdown. Should the improved software not be available for Training's use, the current Fidelity software will be used. Should it appear on March 1, 1991, that certification can not be completed by April 1, 1991, an exemption from 10 CFR 55.45(b)(2)(iv) may have to be requested as an NRC Examination is scheduled to begin the week of June 3, 1991.

CONCLUSION:

We do not expect the preparation of the Simulator Certification package to extend beyond March 26, 1991. However, we believe that it is prudent to request an extension at this time due to the 15-day slippage in the Project schedule and the possibility of additional slippage.

Utilizing the guidance of Generic Letter 90-08, "Simulation Facility Exemptions," we are submitting this request for an exemption from the schedular requirements of 10 CFR 55.45(b)(2)(iii) at this time as a contingency to preclude the possibility of being in violation of this regulation in the event that all requirements for certification have not been completed by March 26, 1991. Pursuant to 10 CFR 55.11, the Commission may, upon application, grant such exemptions from the requirements of the regulations in 10 CFR Part 55 as it determines are authorized by law and will not endanger life or property and are otherwise in the public interest.