

Examination Report No.: 50-528/OL-90-02
Facility Licensee: Palo Verde Nuclear Generating Station
Facility Docket No.: 50-528, 50-529, 50-530
Facility License No.: NPF-41, NPF-51, NPF-74

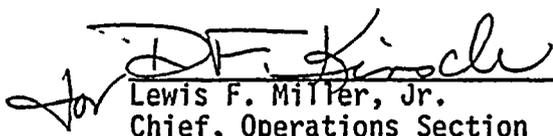
Examination administered at Palo Verde Nuclear Generating Station, Wintersburg, Arizona.

Chief Examiner:


Michael J. Royack
Licensing Examiner

4/9/90
Date Signed

Approved:

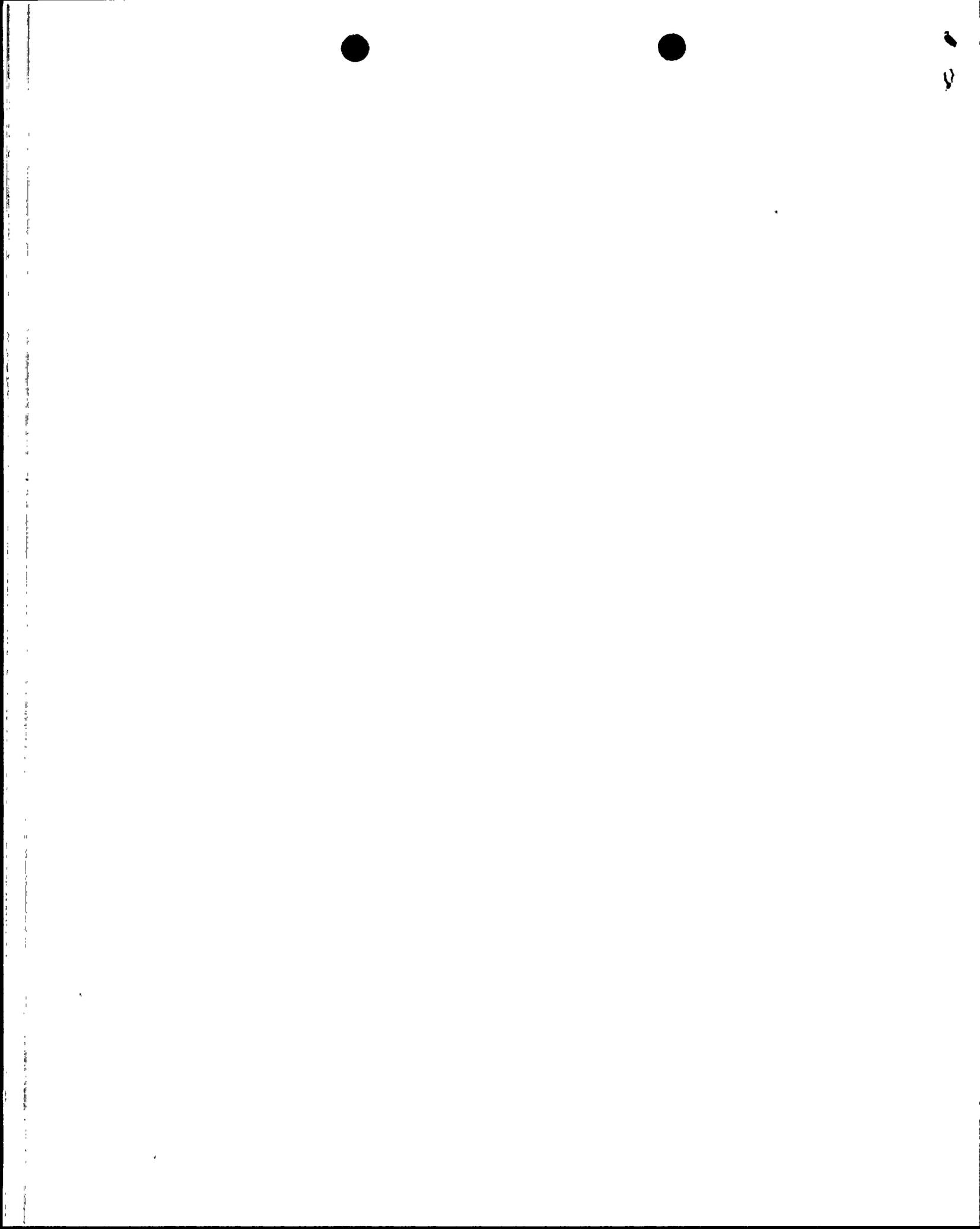

Lewis F. Miller, Jr.
Chief, Operations Section

4/10/90
Date Signed

Examination administered on March 21, 1990.

A simulator operating continuation examination was administered to one Senior Reactor Operator Upgrade candidate. The examination was a continuation of an initial license examination administered by the NRC at the Palo Verde Nuclear Generating Station (PVNGS) during the period of August 22 through August 29, 1989. The results of the August 1989 simulator operating examination for this Senior Reactor Operator Upgrade candidate were determined to be inconclusive; therefore, a continuation of the examination was required in order to make an adequate assessment of the candidate's abilities to safely operate the facility and protect the health and safety of the public.

The results of the simulator operating continuation examination indicate that the Senior Reactor Operator Upgrade candidate has passed the examination. The candidate's file will be revised to indicate the passing of the examination.



REPORT DETAILS

1. Examiner

*Michael J. Royack, Chief Examiner

2. Licensee Persons Contacted

W. Firth, Training Manager
**D. Craig, Operations Training Manager
*T. Cannon, Lead Simulator Instructor

* Indicates persons attending exit meeting.
** Indicates management person contacted for telephone exit clarification.

3. Simulator Scenarios

The simulator scenarios for the examination were developed by the NRC Chief Examiner. The scenarios were developed using PVNGS's Revision 15 simulator model program malfunctions. During a pre-review of the simulator scenarios the scenarios were revised to incorporate malfunction numbers for PVNGS's Revision 17A simulator modeling program platters. The licensee representative responsible for the operation, administration of the simulator, and examination signed pre- and post-examination security agreements.

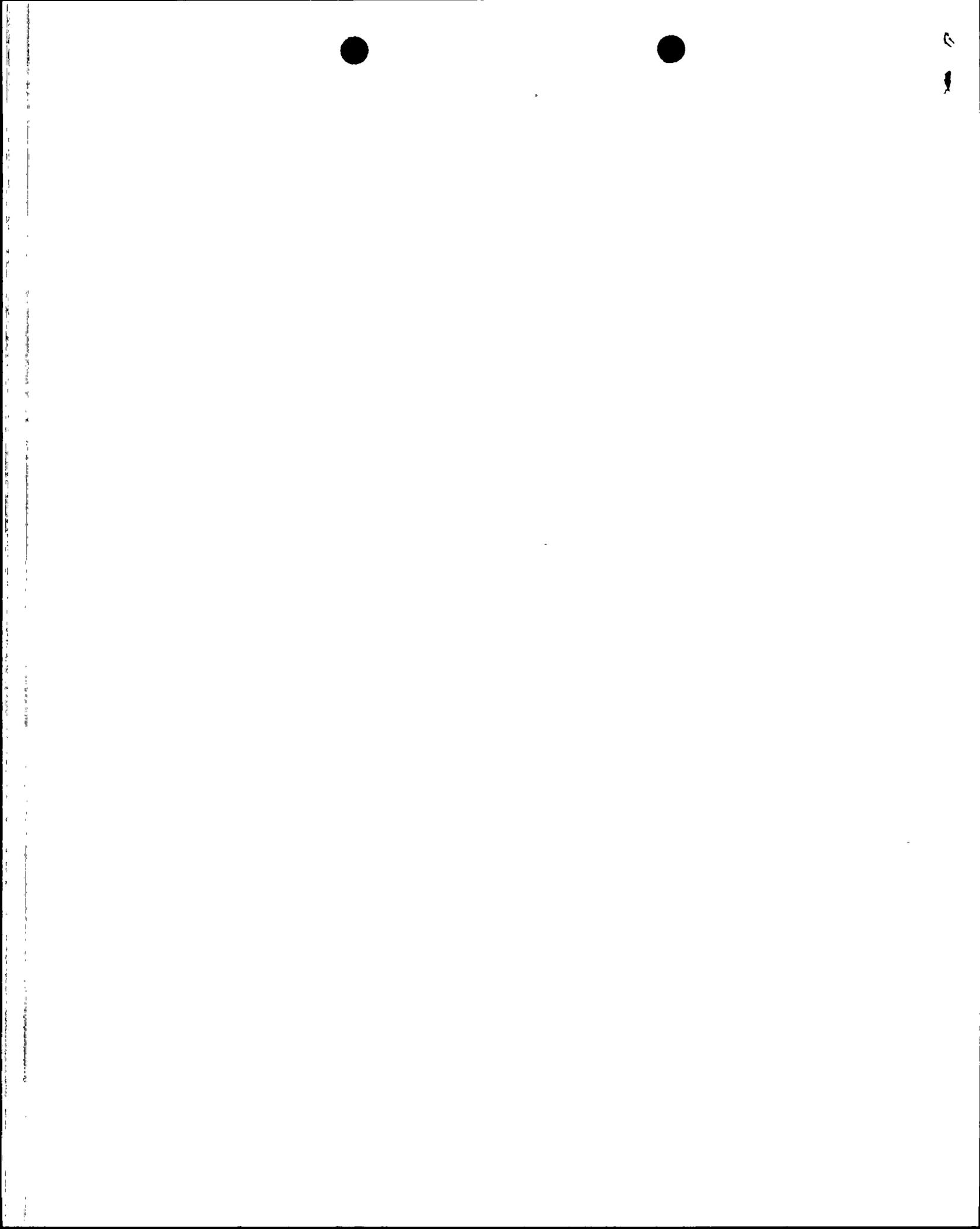
4. Operating Examination and Findings

The simulator continuation operating examination was administered on March 21, 1990. The Senior Reactor Operator Upgrade candidate passed the examination.

Simulator modeling and hardware problems identified during the administration of the examination are detailed in the Simulation Facility Fidelity Report, which is Enclosure 2 of this report.

The continuation examination was administered using the PVNGS Revision 17A platters. The revised modeling program appeared to emulate expected responses of the actual units, and appears to be an improvement over the Revision 15 simulator modeling program.

During the administration of the simulator continuation operating examination the NRC Chief Examiner observed a licensed operator, who was being used as a crew member for the examination, direct a plant operation during a simulated instrument malfunction that was not in compliance with PVNGS alarm response procedure 41AL-1RK4A, Panel B04A Alarm Responses, or plant operating policies. The operator, who was performing in the Senior Reactor Operator (SRO) position, ordered the primary plant operator to isolate letdown when one channel of the pressurizer level control system level indication failed low. The isolation of letdown exacerbated



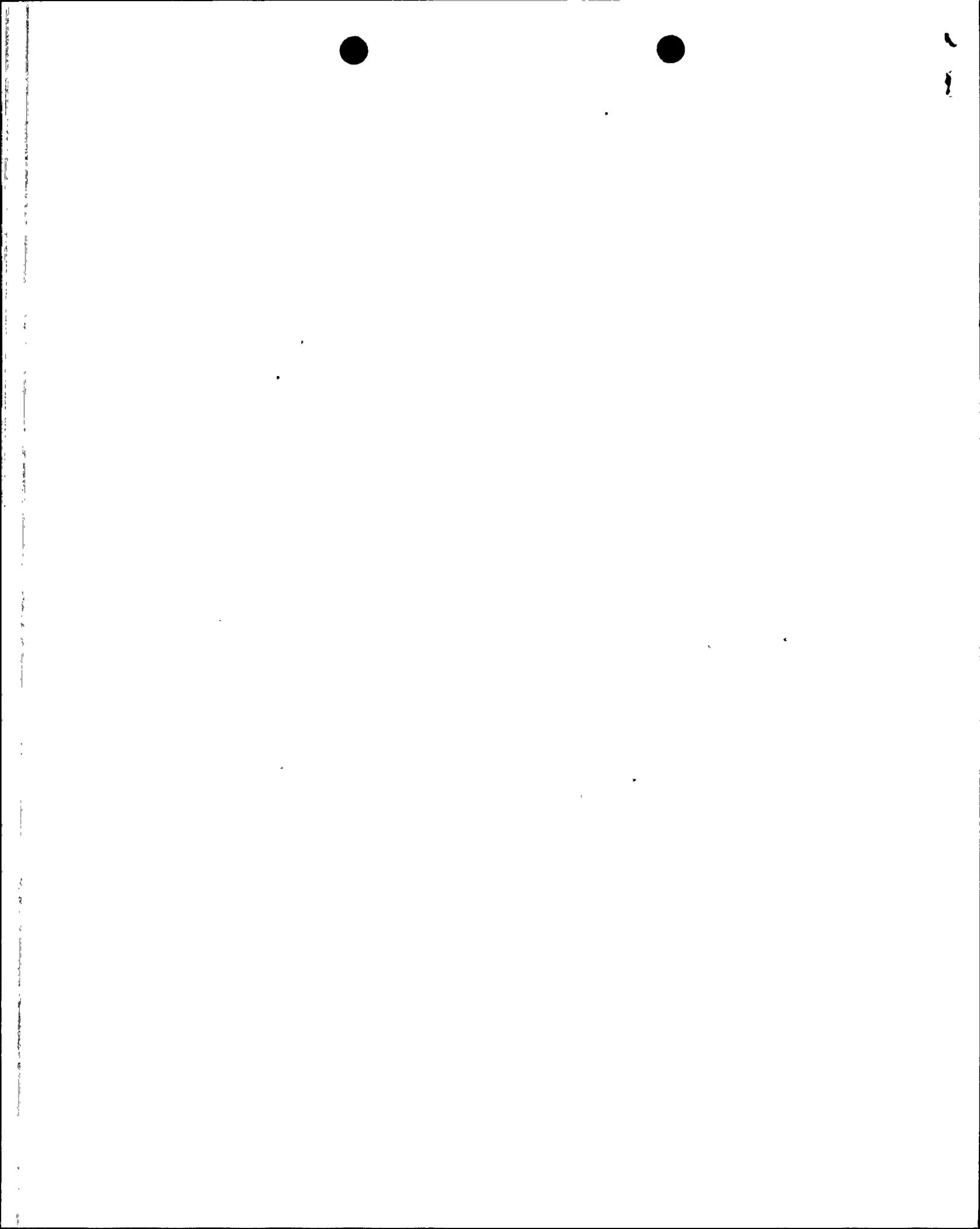
a condition of increasing pressurizer level since the failed channel was the selected controlling channel which automatically started three charging pumps to compensate for the apparent low pressurizer level. Isolation of letdown on the failure of one channel of pressurizer level control instrumentation is not a step in the 41AL-1RK4A alarm response procedure for this plant malfunction. The combination of isolation of letdown, three charging pumps running, and decreasing power transient, caused pressurizer level to increase above the Technical Specification Limiting Condition for Operation (LCO) 3.4.3.1 of 56%. The primary plant operator was taking actions to reduce the pressurizer level by switching to the unaffected level control channel (RCB-LI-110Y), restoring letdown, stopping a charging pump, and eventually taking manual control of the pressurizer level controller (RCN-LIC-110) as required by 41AL-1RK4A.

The SRO's actions were discussed with licensee representatives. The licensee representatives agreed that the actions ordered by the SRO were not in compliance with alarm response procedures or the general operator training. General operator training and alarm response procedures require operators to verify abnormal indications by use of redundant or collaborative instrumentation and not to rely on only one channel of indication to decide on an immediate action. The SRO should have ordered steps in accordance with Alarm Response procedure 41AL-1RK4A, pages 101 and 102, which required the verification of the second pressurizer level indication, RCB-LI-110Y level, checking for system transients by checking Tave/Tref recorder, checking for failed RCB-LI-L110X channel (if failed switching to unaffected channel), and taking manual control of pressurizer level. These required actions were confirmed with licensee representatives.

The licensee stated that the SRO was presently in the training department and not on a regular watch rotation. The SRO would receive instructions and remedial training in the actions that should have been taken and instruction and actions as identified in reference 3 of the cover letter of this report for proper procedural compliance.

5. Exit Meeting

On March 22, 1990 the NRC Chief Examiner met with representatives of the licensee staff to discuss the examination and findings. The licensee agreed with the findings and confirmed the remedial actions that would be taken.



PALO VERDE NUCLEAR GENERATING STATION
MARCH 21, 1990 INITIAL SIMULATOR CONTINUATION EXAMINATION

SIMULATION FACILITY FIDELITY REPORT

The simulator scenarios prepared by the NRC examiner for the examination were prevalidated by the NRC and a licensee representative. The scenarios were developed using initial conditions and malfunctions listed for revision 15 platters. During the pre-review of the examination, the NRC developed simulator scenarios were revised to incorporate malfunctions for the PVNGS revision 17A simulator modeling program.

The simulator response to malfunction and operator input appeared to more closely emulate the actual expected unit response as compared to the prior revision 15 modeling program. It appears that improvements in the simulator modeling program and update of the simulator will improve the simulator's capability to perform as an examination and training tool.

Noted Simulator Problems

The following are anomalies that occurred during the administration of the simulator continuation operating examination.

1. Condensate storage tank (CST) alarm initiates without input. Noted as a programming problem.
2. The annunciator alarm system (RK system) failed during a scenario. The annunciator window would flash one time and a single bell would annunciate or no bell would annunciate. Appears to be a program problem.

