

## Grand Gulf 1

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### Initiating Events

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Significance: Jun 29, 2000

Identified By: NRC

Item Type: FIN Finding

**Increased Risk of Loss of Instrument Air System Due to Fire**

The inspectors identified 33 absorbent pads collecting leaking oil under and around the instrument and service air compressors. No automatic fire detection or suppression equipment was located in the area and only routine inspection of the area was performed by equipment operators once per shift. The absorbent pads were soaked with oil and had the potential to ignite. This increased fire loading without automatic fire detection or suppression capability increased the risk of a loss of instrument air and subsequent reactor scram. Although this issue could be viewed as a precursor to an event, it was determined to have very low risk significance because it did not affect any systems required for safe shutdown of the plant.

Inspection Report# : [2000006\(pdf\)](#)

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### Mitigating Systems

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Significance: Jun 30, 2001

Identified By: NRC

Item Type: NCV NonCited Violation

**Failure to promptly correct a condition that resulted in a degraded heat exchanger surveillance test**

The licensee's program for evaluating the thermal performance of safety-related heat exchangers identified degraded performance of the risk-significant, safety-related high pressure core spray pump room cooler. The degraded condition of the room cooler occurred between December 12, 1997, and May 22, 2000, for an approximate 30-month period. The condition was eventually determined to be caused by an improper technique for collecting the cooler air flow data, which rendered the cooler capacity software calculation unreliable. The failure to promptly correct the room cooler test deficiencies was a violation of Criterion XVI of Appendix B to 10 CFR Part 50. This violation is being treated as a noncited violation, consistent with Section VI. A of the NRC Enforcement Policy. This violation (50-416/0103-01, Section 1R07) has been entered into the licensee's corrective action program in Condition Report CR-GGN-2001-0591. This finding also had crosscutting aspects in the area of problem identification and resolution. The finding that the high pressure core spray room cooler was degraded was of very low safety significance because all mitigation systems remained operable and barrier integrity was not challenged. Following the inspection, the licensee entered the finding into the corrective action program in Condition Report CR-GGN-2001-0591

Inspection Report# : [2001003\(pdf\)](#)G

Significance: Jun 30, 2001

Identified By: NRC

Item Type: NCV NonCited Violation

**Failure to perform corrective action in a timely manner.**

The inspectors determined that the licensee failed to perform adequate corrective actions to replace a control logic relay, for the Division II emergency diesel generator building ventilation system, which was previously identified as being susceptible to failure and required replacement. Failure to replace the subject relay, following previous identified failures, constituted inadequate corrective action and is a violation of 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Action." This violation is noncited in accordance with Section VI.A of NRC's Enforcement Policy and is in the licensee's corrective action program (CR-GGN-2001-1072). This finding also had crosscutting aspects in the area of problem identification and resolution. This finding was of very low safety significance because, although the Division II emergency diesel generator (EDG) outside air fan would not have automatically started in fast speed, the diesel was able to perform its safety function with the fan in slow speed and room temperature below 120 degrees F and because the operators would still have the opportunity to manually shift the fan to fast speed prior to the room reaching 120 F.

Inspection Report# : [2001003\(pdf\)](#)G

Significance: Jun 30, 2001

Identified By: Licensee

Item Type: NCV NonCited Violation

**Failure to perform vendor recommended maintenance.**

Technical Specification 5.4.1 requires procedures be established, implemented, and maintained covering routine preventive maintenance for safety-related equipment. On April 9, 2001, the licensee's root cause analysis determined that their failure to perform vendor recommended routine inspection maintenance of standby liquid control Pump A contributed to the pump's failure and being inoperable as documented in the licensee's corrective action program in Condition Report 2001-0596. This issue is more than minor because standby liquid control Pump A was inoperable for 5 days. This issue was of very low safety significance (Green) because standby liquid control Pump B was available during that time.

Inspection Report# : [2001003\(pdf\)](#)



**Significance:** Jan 30, 2001

Identified By: NRC

Item Type: NCV NonCited Violation

**Lack of Maintenance Instructions Leads to Overfilling of Standby Diesel Generator Pedestal Bearing**

The licensee failed to establish adequate instructions to control lube oil replacement and verification of oil level in the pedestal bearing of the Division II standby diesel generator. This resulted in technicians overfilling the bearing oil reservoir which could have resulted in bearing degradation over extended operation. This violation of Technical Specification 5.4.1 is noncited in accordance with Section VI.A of the NRC's Enforcement Policy, and is in the licensee's corrective action program (CR-GGN-2001-318). The finding was of very low safety significance because although the pedestal bearing was overfilled, the remaining standby diesel generators and offsite power sources remained operable and the licensee subsequently determined the subject diesel remained capable of performing its design function with the overfilled bearing.

Inspection Report# : [2001002\(pdf\)](#)



**Significance:** Jan 22, 2001

Identified By: Licensee

Item Type: NCV NonCited Violation

**Failure to properly install a kaowool nominal 1-hour fire barrier in the Division II switchgear room (Fire Zone OC215).**

Operating License Condition 2.C.41 requires Grand Gulf Nuclear Station to meet the requirements of 10 CFR 50, Appendix R, Section III.G.2. Improperly installed Kaowool in the Division II switchgear room did not provide a required nominal 1-hour fire barrier as reported in LER 2000-002, dated January, 22, 2001. The licensee documented this condition in CR 2000-1481. This finding was treated as a noncited violation. This violation was more than minor because if left uncorrected, it would become a more significant safe shutdown safety system availability concern due to the potential loss of both the Division I and II standby service water systems simultaneously. The issue was of very low safety significance because of the relatively low fire ignition frequency, a fire severity factor of 0.1, and the potential for recovery of the affected mitigating systems.

Inspection Report# : [2001004\(pdf\)](#)



**Significance:** Aug 08, 2000

Identified By: NRC

Item Type: NCV NonCited Violation

**Failure of the licensee to conduct testing to ensure the continued operability of the high pressure core spray diesel generator ventilation system**

The relay that caused the high pressure core spray diesel generator outside air fan to automatically switch the fan from low to high speed was found to be inoperable since May 2000. A noncited violation of 10 CFR Part 50, Appendix B, Criterion XI was identified for the failure to conduct testing of the high pressure core spray diesel generator ventilation system. This violation is in the licensee's corrective action program as Condition Reports CR-GGN-2000-1115 and 1121. Using the Significance Determination Process, the inspectors determined that the issue was of very low safety significance because the diesel was able to perform its safety function with the fan in slow speed and because, once the room temperature exceeded 120 F (a temperature measured every shift), operators would have the opportunity to identify that the outside air fan had not automatically shifted and would manually shift the fan to high speed.

Inspection Report# : [2000010\(pdf\)](#)



**Significance:** Jul 01, 2000

Identified By: NRC

Item Type: NCV NonCited Violation

**Failure to demonstrate control room air conditioning and safeguards switchgear and battery room ventilation systems were effectively controlled through preventive maintenance**

The inspectors identified numerous control room air conditioning and safeguards switchgear and battery room ventilation system equipment failures that were not adequately evaluated. The licensee did not perform an adequate evaluation of a failure in one train if the other train was available. As a result, the licensee did not determine whether each of the failures resulted from common mode failure causes and was unable to ensure that the systems remained capable of performing their intended function after each failure. By not adequately evaluating the equipment failures, and based

on their number, the licensee could not demonstrate that the performance or condition of the systems were being effectively controlled through the performance of appropriate preventive maintenance, as required by the maintenance rule. This was a violation of 10 CFR 50.65(a)(2). This violation (EA-00-167) is being treated as a noncited violation consistent with Section VI.A of the NRC Enforcement Policy. This item was entered into the licensee's corrective action program as Condition Report CR-GGN-2000-0809. This issue was determined to have very low risk significance. Both systems are of low risk significance and no Technical Specification limits were exceeded. During the time that each failure occurred, the other train was operable and no actual loss of safety function of safety-related equipment occurred.  
Inspection Report# : [2000006\(pdf\)](#)

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**Significance:** Dec 29, 2001

Identified By: NRC

Item Type: FIN Finding

**Failure to consider the need to establish goals and monitor the reactor protection system under the maintenance rule program following a functional failure of the end of cycle recirculation pump trip**

The inspectors determined that the licensee did not recognize that the initiation of the end-of-cycle recirculation pump trip function of the reactor protection system exceeded their Maintenance Rule performance criteria. Therefore, they did not consider the need to establish goals and monitor the system under the Maintenance Rule. This finding is documented in the licensee's corrective action program as Condition Report 2001-1916. This finding had a credible impact on safety because the licensee was unable to trend and establish goals for the system and, therefore, would have limited their ability to determine the effectiveness of the maintenance performed. As a result, the licensee could have experienced future functional failures of the end-of-cycle recirculation pump trip, reducing its reliability. The inspectors determined that the safety significance of this finding was very low (Green). Although the licensee did not consider the need to establish goals and monitor the system, conditions under which the end-of-cycle recirculation pump trip would fail were very limited, all other reactivity control systems remained functional, and the end-of-cycle recirculation pump trip function was not required throughout the remainder of this operating cycle.  
Inspection Report# : [2001005\(pdf\)](#)

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**Significance:** Dec 29, 2001

Identified By: NRC

Item Type: NCV NonCited Violation

**Failure to verify adequacy of design of an EOC-RPT modification per 10 CFR 50, Appendix B, Criterion III**

The inspectors determined that, following a design change modification performed under Engineering Request (ER) 2000-0770, the licensee failed to provide measures for verifying or checking that the end-of-cycle recirculation pump trip function of the reactor protection system was ensured in all cases of turbine control valve fast closure. The modification to the end-of-cycle recirculation pump trip circuitry added margin to the oil pressure set point for the turbine control valve operating oil pressure but made only limited analytical justification relative to short duration turbine control valve fast closures during a short duration load reject. The engineering request did not address all of the inherent timing delays associated with the design of the circuitry installed in the plant. As a result, it remained possible for short duration turbine control valve fast closures to occur without the initiation of an end-of-cycle recirculation pump trip. This was a noncited violation of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," and is in the licensee's corrective action program as Condition Report 2001-1371. This violation is more than minor because if a short duration load reject occurred near the end of the operating cycle, the end-of-cycle recirculation pump trip function may not have actuated. The safety significance of this finding was very low (Green) because although the initiation of the end-of-cycle recirculation pump trip function failed, the reactor scrambled with all control rods inserted, the turbine control valves only partially closed, and the turbine bypass valves opened as designed. As a result, the reactor vessel pressure increase was small and had no significant effect on thermal limits.  
Inspection Report# : [2001005\(pdf\)](#)

**Significance:** N/A Aug 23, 2001

Identified By: Licensee

Item Type: NCV NonCited Violation

**Licensee Identified that failure to follow procedures resulted in Inadequate Combustible Material Controls**

Technical Specification 5.4.1 requires procedures be established, implemented, and maintained for a Plant Fire Protection Program. Procedure 10-S-03-4, "Fire Prevention: Control of Combustible Material," Revisions 11 and 12 requires the use of combustible material permits to control the storage and use of combustible materials at the Grand Gulf Nuclear Station. Between January 2000 and August 2001, the licensee introduced combustible materials on numerous occasions into areas governed by the applicable procedure without proper use of a combustible material permit. The corrective actions to address this condition were contained in the licensee's condition report CR-GGN-2001-0509. This is being treated as a Non Cited Violation.  
Inspection Report# : [2001006\(pdf\)](#)

G**Significance:** Sep 27, 2001

Identified By: Licensee

Item Type: NCV NonCited Violation

**Failure to provide adequate prescribed instructions to restore thermal limit monitoring capabilities after deliberately inhibiting the monitoring equipment prior to a planned transient.**

Technical Specification 5.4.1 requires procedures to be established to provide administrative instructions for equipment controls. On August 27, 2001, the licensee failed to provide adequate prescribed instructions to restore thermal limit monitoring capabilities after deliberately inhibiting the monitoring equipment during a planned transient. The licensee documented this condition in CR 2001-1486. This finding was treated as a noncited violation. The finding had a credible impact on safety because it resulted in the licensee not recognizing operation in a condition exceeding Technical Specification thermal limits in a timely manner. The finding was of very low safety significance because although the finding could have affected the integrity of the fuel cladding, the fuel design limits were not approached and exposure time in this condition was within the limiting condition of operation.

Inspection Report# : [2001004\(pdf\)](#)

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## Emergency Preparedness

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## Occupational Radiation Safety

G**Significance:** Apr 27, 2001

Identified By: NRC

Item Type: NCV NonCited Violation

**Failure to perform a radiological survey of the residual heat removal pump A room**

An inspector determined that radiation levels in the Residual Heat Removal Pump A room were significantly higher than posted levels due to recent changes in plant operating conditions. The failure to perform a radiological survey is a violation of 10 CFR 20.1501(a). This violation is being treated as a noncited violation consistent with Section VI. A.1 of the NRC Enforcement Policy. This violation is in the licensee's corrective action program as CR-GGN-2001-0674. The safety significance of the finding was determined to be very low by the Occupational Radiation Safety SDP because there was no overexposure or substantial potential for an overexposure, and the ability to assess dose was not compromised. The violation was more than minor because the failure to perform a radiological survey has a credible impact on safety and the potential for unplanned or unintended dose.

Inspection Report# : [2001003\(pdf\)](#)G**Significance:** Apr 27, 2001

Identified By: NRC

Item Type: NCV NonCited Violation

**Failure to perform a radiological survey on the drywell head**

On June 6, 2001, the inspector determined that the contamination levels on top of the drywell head were significantly higher than the contamination levels measured around the flange area of the drywell head. The drywell flange area survey results were used as the radiological conditions for the top of the drywell head. These conditions were also used to brief a worker and prescribe protective clothing and respiratory protection prior to assigning work on top of the drywell head. As a result, a worker became contaminated and was assigned an internal dose of 10 millirem. No survey of the top of the drywell head was performed until after the contamination event. The failure to evaluate the concentrations or quantities of radioactive material and the potential radiological hazards on top of the drywell head prior to assigning work in that area is a violation of 10 CFR 20.1501(a). This violation is being treated as a noncited violation consistent with Section VI. A.1 of the NRC Enforcement Policy. This violation is in the licensee's corrective action program as Condition Report CR-GGN-2001-1088. The safety significance of this violation was determined to be very low by the Occupational Radiation Safety SDP because there was no overexposure or substantial potential for an overexposure, and the ability to assess dose was not compromised. The violation was more than minor because the failure to perform a radiological survey resulted in an unintended dose.

Inspection Report# : [2001003\(pdf\)](#)G**Significance:** Apr 27, 2001

Identified By: Licensee

Item Type: NCV NonCited Violation

**Failure to wear a proper radiation monitoring device.**

Technical Specification 5.7.1 requires that an individual permitted to enter a high radiation area be equipped with a radiation monitoring device that continuously integrates dose. On April 21, 2001, the licensee identified that a worker entered a high radiation area with an electronic dosimeter turned off and was, therefore, unable to integrate dose. This event is described in the licensee's corrective action program, reference Condition Report CR-GGN-2001-0736. The safety significance of this finding was determined to be very low by the Occupational Radiation Safety SDP because there was no overexposure or substantial potential for an overexposure, and the ability to assess dose was not compromised.  
Inspection Report# : [2001003\(pdf\)](#)



**Significance:** Apr 27, 2001

Identified By: Licensee

Item Type: NCV NonCited Violation

**Failure to perform a radiological survey for valve maintenance.**

10 CFR 20.1501(a) states that each licensee shall perform surveys that are reasonable to evaluate radiation levels and potential radiological hazards. On April 18, 2001, the licensee identified that during valve maintenance a worker was in a localized area of a larger room that had not been surveyed. This event is described in the licensee's corrective action program, reference Condition Report CR-GGN-2001-0672. This violation is being treated as a noncited violation. The safety significance of this finding was determined to be very low by the Occupational Radiation Safety SDP because there was no overexposure, or substantial potential for an overexposure and the ability to assess dose was not compromised.  
Inspection Report# : [2001003\(pdf\)](#)

**Significance: SL-IV** Feb 02, 2001

Identified By: NRC

Item Type: NCV NonCited Violation

**Failure to perform ALARA job reviews for work greater than 1 person-rem**

On January 31, 2001, the inspector noted two examples where jobs performed during Refueling Outage (RFO) 10 were not reviewed in accordance with station as low as reasonably achievable (ALARA) program procedures. Technical Specification 5.4.1 requires procedures for the ALARA program. Section 6.7.2.a. of Procedure 01-S-08-8, "ALARA Program," Revision 16, states in part, that the ALARA Team must review jobs greater than 1 person-rem but less than 5 person-rem. The first example was "Work Inside the Condensers and Hotwells" (RWP 99-09-073), the second was "Emergency Core Cooling System Valve Work" (RWP 99-09-020). Both jobs were originally budgeted for 0.500 person-rem; however, during the work evolution they both exceeded 1 person-rem (1.2 and 2.9 person-rem respectively). The failure of the ALARA Team to review the above jobs that exceeded 1 person-rem was a violation of Technical Specification 5.4.1. This violation is being treated as a noncited violation and is in the licensee's corrective action program as Condition Report GGN-2001-0169. The significance of this violation was determined to be more than minor because the failure to perform an appropriate ALARA level review could cause unnecessary additional worker dose, and result in a credible impact on a worker's radiological safety. However, this issue did not affect the cornerstone since there were no overexposures and monitoring devices remained operable.  
Inspection Report# : [2001002\(pdf\)](#)

**Significance: SL-IV** Feb 02, 2001

Identified By: Licensee

Item Type: NCV NonCited Violation

**Failure to perform ALARA re-reviews of jobs previously approved by the ALARA Committee, when the jobs were expected to accumulate greater than 25 percent more than the estimate last approved by the Co**

Technical Specification 5.4.1 requires procedures for the ALARA program. Section 6.6.6.a.(1) of Procedure 01-S-08-8, "ALARA Program," Revision 16, states, in part, that the ALARA Committee performs re-reviews of jobs previously approved by the Committee, when the jobs are expected to accumulate greater than 25 percent more than the estimate last approved by the Committee. On June 22, 2000, four examples of radiation work permits that exceeded 25 percent more than the last estimate approved by the ALARA Committee were identified, as described in the licensee's corrective action program as CR-GGN-2000-0895. This issue was more than minor but was of very low safety significance because it did not affect a cornerstone.  
Inspection Report# : [2001002\(pdf\)](#)



**Significance:** Apr 06, 2000

Identified By: NRC

Item Type: NCV NonCited Violation

**Inadequate survey of items released from the controlled access area**

The inspectors identified that the licensee failed to adequately survey items released from the controlled access area. Specifically, the licensee failed to evaluate the presence of hard-to-detect radionuclides. The failure to adequately survey items could result in the release of licensed material. This violation of 10 CFR 20.1501(a) is being treated as a noncited violation, consistent with Section VI.A of the NRC Enforcement Policy. This violation is in the licensee's corrective action program as Condition Report CR-GGN-2000-0479. This issue was characterized as a "green" finding based on the occupational radiation safety significance determination process which indicated that the violation had very low risk significance because the violation did not result in public dose greater than 0.005 rem and there were no more than five events.  
Inspection Report# : [2000004\(pdf\)](#)



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## Public Radiation Safety

G**Significance:** May 17, 2001

Identified By: NRC

Item Type: NCV NonCited Violation

**Failure to properly classify and manifest a radioactive waste shipment**

The inspector identified that the licensee excluded measured Pu-241 analysis results from the Reactor Water Cleanup (RWCU) A resin waste stream scaling factors on February 9, 2001. Radioactive Waste Shipment 2001-0203, containing RWCU-A resin, was classified using those scaling factors, manifested, and shipped on February 12, 2001, without determining or documenting the Pu-241 activity. The licensee confirmed that no other shipments during the inspection period were affected. Because the licensee excluded measured Pu-241 activity from their scaling factors, reasonable assurance was not provided that the indirect method of identifying radionuclides in that waste stream was valid. Therefore, the exclusion of Pu-241 in the waste classification and manifest for Radioactive Waste Shipment 2001-0203 was a violation of 10 CFR Part 20, Appendix G. This violation is being treated as a noncited violation consistent with Section VI.A.1 of the NRC Enforcement Policy. This violation is in the licensee's corrective action program as Condition Report 2001-0994. The safety significance of this violation was determined to be very low by the Public Radiation Safety SDP because radiation limits were not exceeded and there was no breach of package during transit, certificate of compliance problem, low level burial ground access problem, or failure to make notifications or provide emergency information. The violation was more than minor because there was a credible impact on safety, and it involved an occurrence in the licensee's radioactive material transportation program.

Inspection Report# : [2001003\(pdf\)](#)

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## Physical Protection

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## Miscellaneous

**Significance:** N/A Sep 13, 2000

Identified By: NRC

Item Type: FIN Finding

**Acceptable Corrective Action Program**

The licensee was effective at identifying problems and putting them into the corrective action program. The licensee's program was effective at problem identification. The licensee effectively used risk in prioritizing the extent to which individual problems would be evaluated and in establishing schedules for implementation of corrective actions. Corrective actions, when specified, were generally implemented in a timely manner. Licensee audits and assessments were found to be effective. Based on the interviews conducted during this inspection, workers at the site felt free to input safety issues into the problem identification and resolution program. However, the licensee's resolution of two Non-Cited Violations for inadequate corrective actions were narrowly focused or incomplete. The licensee's followup for inadequate corrective actions for main steam isolation valve failures did not identify a potentially generic problem incorporating industry operating experience. The licensee's followup for inadequate corrective actions for repetitive service water check valve failures did not identify that one of the contributing causes was overly narrow searches for similar issues in response to the individual valve failures.

Inspection Report# : [2000007\(pdf\)](#)**Significance:** N/A Aug 23, 2001

Identified By: NRC

Item Type: FIN Finding

**Acceptable Corrective Action Program**

The licensee adequately identified problems and put them into the corrective action program. The licensee adequately used risk in prioritizing the extent to which individual problems would be evaluated and in establishing schedules for implementation of corrective actions. Licensee audits and assessments critically assessed the licensee's problem identification and resolution activity and identified needs for improvement in a number of areas including root cause evaluation, timely condition report initiation, and condition report backlogs. During inspection interviews, workers at the site expressed no reservations to input safety issues into the problem identification and resolution program. The licensee implemented corrective actions in a timely manner. The licensee implemented effective corrective actions to prevent recurrence of significant conditions adverse to quality.

Inspection Report# : [2001006\(pdf\)](#)**Significance:** N/A Jun 29, 2000

Identified By: NRC

Item Type: FIN Finding

**Incomplete documentation to verify Alert and Notification System performance indicator data**

The licensee's written documentation of the siren testing data supporting reported performance indicator data was incomplete. The local offsite agencies tested the sirens monthly by conducting a complete cycle of all 43 offsite sirens and orally reported the results to the licensee. The licensee obtained written computer-generated results of monthly siren tests; however, it did not maintain written documentation of alternate methods used by the offsite agencies to determine siren operability, such as local resident verification or growl testing. The licensee entered the issue of incomplete siren test data recording into its corrective action system as Condition Report CR-GGN-2000-0922. This issue was evaluated using the screening process of NRC Inspection Manual Chapter 0609, "Significance Determination Process." By applying the Groups 1, 2, and 3 screening criteria, the inspector determined that the issue did not meet the criteria for entry into the significance determination process because it was not a failure to meet an emergency preparedness planning standard or other regulatory requirement. However, the issue related to the collecting or reporting of performance indicator data. Specifically, the inspector could not verify the performance indicator value from documented test results and determine if a threshold could be exceeded. The inspector concluded that the issue provided substantive information regarding the licensee's ability to conduct an adequate problem identification and resolution of siren failures and that the issue had generic implications for other sites that relied on data provided by offsite organizations. By not documenting siren failures in detail, the licensee could not trend failure mechanisms, recurring failures, or the adequacy of corrective actions for previous failures. Therefore, the issue was determined to be a finding of no color.

Inspection Report# : [2000006\(pdf\)](#)

**Significance: N/A** Jun 06, 2000

Identified By: NRC

Item Type: FIN Finding

**Poor Initial Operator License Performance**

Four of the six initial applicants failed the written examination and overall average scores were low (below passing). This was documented by the licensee in Condition Report CR-GGN-2000-0776.

Inspection Report# : [2000301\(pdf\)](#)

Last modified : March 27, 2002