UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION IV
611 RYAN PLAZA DRIVE, SUITE 400
ARLINGTON, TEXAS 76011-4005

September ~~XX~~ 28, 2007

MEMORANDUM TO: Harry A. Freeman, Senior Allegation Coordinator

FROM: Donald L. Stearns, Health Physicist, Plant Support Branch

THRU: Michael P. Shannon, Chief, Plant Support Branch

SUBJECT: COLUMBIA GENERATING STATION, Allegation Closure (RIV-2007-A-0079)

In response to your memorandum dated August 29, 2007, Plant Support Branch (PSB) has addressed the actions listed below. PSB reviewed the licensee response dated August 22, 2007, and is providing our recommendation. The concerns identified were addressed by an individual appointed by the licensee to conduct the investigation. PSB reviewed the qualifications of the licensee's investigator and determined the individual was independent of the organizations affected by the concern, possessed adequate investigative experience, and was knowledgeable of the functional areas. The methodology used by the investigator was of sufficient depth and scope.

Concern #1

The licensee did not implement an adequate ALARA program to maintain doses as low as is reasonably achievable. For example; personnel contamination events were 150 percent of the outage goal, 13 personnel from the recirculation pump crew posed for a picture inside a posted high radiation area, lack of emphasis to clean up work area after completion of job added to dose, large number of contractors inside the power block without productive work assignments, and the outage dose goal of 250 rem was exceeded.

Licensee's Assessment

The investigator reviewed outage goals and condition reports, and conducted interviews with appropriate personnel to address this concern and examples. The evaluation concluded that personnel contaminations did exceeded the outage goal by 43 percent. A total of 114 personnel contaminations occurred during the outage compared to the goal of less than 80. A condition report, CR 2-07-06868, was generated to address this issue and additional corrective actions are currently being developed by the Radiation Protection Department.

The issue of personnel posing for a picture inside a posted high radiation area was determined by the investigator to be a valid concern. The area where the crew assembled for the photograph was in a low dose area, even though it was in a posted high radiation area. The Radiation Protection Manager noticed this issue as it occurred and immediately provided on-the-spot coaching and mentoring to the drywell control point and the job supervisor. A condition report, CR 2-07-07591, was subsequently initiated on this event.

The concern of failure to clean up work areas after completion of jobs could not be validated by the investigator through interviews, review of outage trend reports, or a search of the condition report data base.

C/U

The licensee agreed that clean up of work areas increases overall dose and stated that performance in this area could always be improved. However, the licensee could not validate that this process needed increased emphasis during the outage.

The investigator performed interviews, conducted a review of outage reports, and searched the condition report data base for issues related to the concern of workers inside the power block without productive work assignments. This example could not be validated by the licensee. Some workers had experience at other nuclear sites but were working at Columbia Generating Station for the first time. Also, this was the first nuclear site work experience for a large percentage of contractors. This does not imply that the workers were not qualified or experienced at the type of activity they were assigned. The type, scope, difficulty, and duration of jobs along with the qualifications and experience level of the craftsmen are taken into consideration when assigning work. It is a common practice to assign less experienced workers to work with or support more experienced crews, thus providing valuable on-the-job training and building experience for subsequent outages.

The investigator reviewed outage dose reports and conducted interviews with the Radiation Protection staff concerning the total outage dose. The licensee agrees that the goal of 250 rem was exceeded. The R-18 outage dose goal of 250 person-rem was exceeded by 5 person-rem. A total of 376,000 work hours were accumulated during the outage. In comparison, during the R-17 outage, the station received 280 person-rem and worked 227,000 hours (149,000 less hours than worked in R-18). This calculates to 1.22 mrem per hour for work in R-17, and 0.67 mrem per hour for work in R-18. Outage dose rates for various jobs are difficult to predict. Also, unexpected problems with expanded scope and broken tools resulted in higher than anticipated dose.

Three of the five examples listed were validated by the licensee. Condition reports were initiated to address two of the examples validated by the licensee. A condition report was not generated for exceeding the exposure goal by 5 rem.

NRC's Resolution

The inspector determined that the investigative methodology used by the investigator was sufficient to address the examples listed in the concern. After review of the licensee's response, the inspector agrees that three of the five examples are valid.

Although the licensee did not make an overall determination of whether the concern of an inadequate ALARA program was substantiated or not, from a review of the licensee's assessment of this concern the Plant Support Branch did not identify any violations of regulatory requirements. A review of the ALARA program will be conducted, in accordance with the NRC's baseline inspection program the week of October 1, 2007.

Recommendation

Recommend this concern be closed as not substantiated, because none of the five examples are violations of regulatory requirements.

Concern #2

An individual exited the radiological controlled area (RCA) via a normally closed exit door without passing through a contamination monitor.

Licensee's Assessment

The investigator conducted interviews with the Quality Assurance Inspector involved with identification and documentation of this issue and reviewed the circumstances associated with this event. This issue was substantiated by the licensee and was addressed in condition report, CR 2-07-05097, initiated on May 26, 2007. An apparent cause evaluation was required as part of the condition report. The apparent cause evaluation performed by the licensee revealed that work instructions did not contain an adequate level of detail to successfully complete the task, including routing paths for hoses and the requirement for radiation protection coverage during breach of the radiological controlled area boundary. Also, health physics instructions relayed to the individual by an equipment operator were misunderstood. It was also noted by the licensee that the RCA boundary rope was removed from across the door during this event resulting in an unposted entry to the RCA. Information related to movement of the boundary rope was not included in the licensee's response to this allegation, but was included in the associated condition report and apparent cause evaluation. Corrective actions have been initiated by the licensee.

NRC's Resolution

The inspector reviewed the licensee's response and determined that the investigative methodology used by the investigator and the apparent cause evaluation were sufficient to identify the underlying causes related to the concern. The NRC agrees that the issue of an individual exiting the RCA through a normally closed exit door was substantiated. The failure to properly exit from the RCA and the failure to adequately post the entrance to the RCA are considered violations of Technical Specification 5.4.1.a which requires that written procedures shall be established, implemented, and maintained covering the applicable procedures recommended in Regulatory Guide 1.33, Revision 2, Appendix A, February 1978. Regulatory Guide 1.33 requires radiation protection procedures, including procedures for access control to radiation areas. These issues are greater than minor because they are associated with the Occupational Radiation Safety Cornerstone attribute of Program and Process; Procedures and affect the cornerstone objective of protection of the worker from exposure to radiation. These issues were identified by the licensee and immediately addressed through a condition report and apparent cause evaluation. Corrective actions, including restricting the individual from the RCA, training, and additional instructions in work orders were reviewed by the NRC and appear to be appropriate to prevent a similar occurrence. Final disposition of these issues will be documented in the Integrated Inspection Report 2007-004.

Recommendation

Recommend this concern be closed as substantiated.

Concern #3

An individual witnessed Concern #2, and was chastised by a manager after bringing up the issue in the management outage meeting.

Licensee's Assessment

The investigator interviewed a number of Outage Command Center personnel who would have been in the center at the time of the meeting. The investigator could not identify a specific event or person who might have been chastised during the outage meetings. All personnel interviewed stated that chastising an individual for identifying a safety concern would not be tolerated and that radiological safety is considered as important as nuclear or industrial safety. This issue could not be substantiated by the licensee.

NRC's Resolution

The inspector reviewed the licensee's response and determined that the investigative methodology used by the investigator was sufficient to identify the underlying causes related to the concern. The inspector reviewed the investigator's evaluation of this concern and agrees that the issue was not substantiated.

Recommendation

Recommend this concern be closed as non-substantiated.

Concern #4 Note: This issue was forwarded to the licensee for their information. No formal response was requested. The licensee voluntarily provided information to address the concern of removing clearance tags.

The workforce at the site has a large number of inexperienced workers. Recently, workers were given a work package to land some leads, when they got to the work area, clearance tags were on the leads. The workers then removed the clearance tags and landed the leads.

Licensee's Assessment

On June 13, 2007, a contractor foreman noted the danger tags in the work package during his review and immediately notified the Operations Department who initiated a condition report. An apparent cause evaluation was conducted and revealed that the workers believed they had permission from the Operations Department to remove the danger tags as part of their work. Also, the foreman did not provide adequate guidance to the electricians prior to assigning the work. Corrective actions include a revision to general employee training to clearly state that only Operations personnel are authorized to remove danger tags, and to address pre-job briefings provided by the foreman. The response to an example in concern #1 identified that a larger than normal number of workers at the site during R-18 were inexperienced with working at nuclear sites. This does not indicate they were not experienced or qualified to perform their work.

NRC's Resolution

The inspector reviewed the licensee's response and determined that the investigative methodology used by the investigator was sufficient to identify the underlying causes related to the concern. The inspector reviewed the investigator's evaluation of this concern and agrees that the issue of the site having a large number of inexperienced workers was not substantiated. The NRC agrees with the conclusions provided by the licensee concerning the improper removal of clearance tags and considers their actions appropriate.

Recommendation

PSB recommends That this concern be closed as non-substantiated. The NRC agrees with the conclusions provided by the licensee concerning the improper removal of clearance tags and considers their actions appropriate. No further action is warranted.