



Department of Energy
Washington, DC 20585

October 26, 2004

Ms. Nancy Tuor, []
Kaiser-Hill Company, LLC
10808 Highway 93
Unit B
Golden, CO 80403-9200

Subject: Kaiser-Hill Company, LLC Price-Anderson Amendments Act Program
Review

Dear Ms. Tuor:

The Department of Energy's (DOE) Office of Price-Anderson Enforcement (OE) conducted an onsite review of your Price-Anderson Amendments Act (PAAA) program and a limited review of your management and independent assessment programs from September 7-9, 2004. This review included pertinent PAAA program and assessment program documentation and interviews with key Kaiser-Hill Company, LLC (Kaiser-Hill) personnel.

Your PAAA program was evaluated against the criteria and guidance established by DOE Enforcement Guidance Supplement 00-02, *Price-Anderson Amendment Act (PAAA) Program Reviews*. As part of this review, your processes for identifying and screening nuclear safety noncompliances for PAAA applicability, reporting applicable noncompliances into DOE's Noncompliance Tracking System, your internal tracking and trending of noncompliances, and your causal analysis and corrective action processes were evaluated.

Overall, our review concluded that your current PAAA program meets DOE expectations and guidance. Though the review did identify some weaknesses, the overall structure of your program, including management support, implementing procedures, breadth of sources reviewed for potential noncompliances, noncompliance determinations, and corrective action management, are improved since our initial review of your PAAA program in May 2002. However, OE is not satisfied with timeliness with which Kaiser-Hill pursued the needed corrective actions. It was not until the beginning of 2004, following a glovebox fire and associated Enforcement Action, that PAAA program corrective actions were taken which significantly improved potential PAAA noncompliance screening and reporting. Similarly, corrective actions directed at improving your management and independent assessment programs were also initiated in the beginning of 2004, following the glovebox fire and associated Enforcement Action.

The strengths and weaknesses of your PAAA and assessment programs are identified below and further described in more detail in the enclosed report. It should be noted that many of these strengths are the result of PAAA program improvements made in 2004.

PAAA Program/Assessment Program Strengths

- The Kaiser-Hill PAAA coordinator is independent of line functions and frequently interfaces with senior Kaiser-Hill management.
- Assigned personnel having PAAA program responsibility were found to be knowledgeable and dedicated to supporting and improving the Kaiser-Hill PAAA program.
- The Kaiser-Hill PAAA program is formally established by procedures and integrated into the Kaiser-Hill issue identification process and corrective action management process.
- Breadth of sources reviewed by Kaiser-Hill for potential noncompliances is comprehensive. This is evident by the sampling of operational data reviewed by the Safety Analysis Center on a daily basis.
- The identification and reporting of PAAA noncompliances more consistently aligns with OE guidance than was the case at the time of your 2002 review.
- Corrective actions are identified, tracked, and closed for PAAA noncompliances. Corrective action effectiveness reviews, as well as extent-of-condition (generic implications) reviews, are consistently performed.
- In most cases timeliness of screening, evaluating, and reporting noncompliances meets DOE expectations.
- The Kaiser-Hill Management and Independent Assessment programs are formally established by procedure and integrated into the Kaiser-Hill corrective action management process.
- Scheduling and prioritizing of Kaiser-Hill independent assessment activities is formally established by procedure, flexible enough to account for changes in management emphasis, and involves senior Kaiser-Hill management in the process.

PAAA Program Weaknesses

- Kaiser-Hill response to the first OE PAAA program review in May 2002 was slow and initially ineffective.

- Many examples of potential PAAA noncompliances were found to have not been screened prior to 2004. In 2004, after corrective actions were taken, significantly fewer examples of potential noncompliances not being screened were discovered.
- Many examples of PAAA noncompliances were found to have not been reported into the Noncompliance Tracking System prior to 2004. In 2004, after corrective actions were taken, significantly fewer examples of noncompliances not being reported were discovered.
- The Kaiser-Hill process for trending of operational data for potential repetitive or programmatic PAAA noncompliances has not reached an expected state of maturity.
- Deficiencies and associated corrective actions are tracked in several approved databases rendering it difficult to track and trend site-wide issues.
- The Kaiser-Hill Price-Anderson Screening System does not capture all PAAA related screens rendering it difficult to identify potential repetitive or programmatic PAAA noncompliances.
- Kaiser-Hill managers responsible for conducting management assessments are not trained in techniques required to perform this task.
- Kaiser-Hill management assessments lack the rigor expected in an effective management assessment program.

No reply to this letter is required. Please contact me at (301) 903-0100 or have your staff contact Richard Day at (301) 903-8371 if you have any questions.

Sincerely,



Stephen M. Sohinki
Director
Office of Price-Anderson Enforcement

Enclosure: PAAA Program Review

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Price-Anderson Amendments Act Program Review Kaiser-Hill Company, LLC

I. Introduction

During August and September 2004, including a site visit on September 7-9, 2004, the Department of Energy's (DOE) Office of Price-Anderson Enforcement (OE) conducted a review of the Price-Anderson Amendments Act (PAAA) program implemented by Kaiser-Hill Company, LLC (Kaiser-Hill), at the Rocky Flats site. OE staff performed a review in accordance with DOE Enforcement Guidance Supplement 00-02, *Price-Anderson Amendment Act Program Reviews*. This review evaluated (1) Kaiser-Hill's PAAA program pertaining to the identification and screening of nuclear safety noncompliances, (2) the method for determining a noncompliance's reportability to the DOE Noncompliance Tracking System (NTS), (3) the causal determination process for noncompliances reported to the onsite tracking system and the NTS, and (4) corrective action tracking, implementation, and closure. OE staff also reviewed Kaiser-Hill's Management and Independent Assessment programs.

II. General PAAA Program Implementation

The Kaiser-Hill PAAA program is formally established by and described in manual 1-MAN-022-PAAAPROG, *Price-Anderson Amendments Act Program Manual*, Version 3, dated August 16, 2004. This procedure provides the general framework by which Kaiser-Hill identifies, evaluates, reports, corrects, and tracks PAAA noncompliances. Responsibilities of the Kaiser-Hill PAAA Points-of-Contact (POC) are delineated in the procedure to include the identification, screening, and evaluation of potential noncompliances. In addition, the POCs are responsible for drafting NTS reports and for tracking all corrective actions to closure. Responsibilities of the PAAA Program Manager include ensuring that PAAA screens and evaluations are performed for all potential noncompliances, entering reports into the NTS, detecting noncompliances involving repetitive or programmatic issues, conducting PAAA related training, and maintaining the Price-Anderson Screening System (PASS).

In general this procedure provides Kaiser-Hill with a compliant framework for screening, evaluating, and reporting PAAA noncompliances. However, the procedure allows for flexibility through the use of "should" statements where such flexibility is inappropriate (e.g., documenting of screening results, entering NTS related corrective actions into the Plant Action Tracking System (PATS)). The major elements of the Kaiser-Hill PAAA program are adequately described and responsibilities are identified for key personnel. The scope of this program reflects an understanding of the applicability of the rules and

includes a broad base of sources that are reviewed for potential noncompliances. Sufficient staff has been assigned to perform the screening and assessments of the potential noncompliances. Formal training has been established. Our review found that the areas of weakness in the Kaiser-Hill PAAA program procedures, identified in the prior program review in May 2002, have been adequately addressed. However, the procedural deficiencies limiting the screening and evaluation of potential noncompliances were not corrected until the beginning of 2004 and were not formally captured in procedures until August 2004.

III. PAAA Organizational Relationship

The Kaiser-Hill PAAA Coordinator, who is independent of Kaiser-Hill line programs, reports to the president of Kaiser-Hill through the Director for Safety, Engineering, and Quality Programs. Interviews with both the Kaiser-Hill Vice-President and the PAAA Program Manager indicate that the PAAA Program Manager has unfettered access to senior Kaiser-Hill management when PAAA issues arise and that typically the PAAA Program Manager would meet with Kaiser-Hill senior management several times a month to discuss pertinent issues.

IV. Identification and Screening of Noncompliances

Kaiser-Hill manual 1-MAN-022-PAAAPROG defines the process by which Kaiser-Hill identifies and screens potential noncompliances. POCs across the site have the primary responsibility for identifying and screening potential noncompliances. To aid in the identification of potential noncompliances and potential repetitive or programmatic issues, Kaiser-Hill has established the Safety Analysis Center (SAC). The SAC personnel, consisting of project managers, project management personnel, Safety, Engineering, and Quality Programs personnel, and DOE Rocky Flats Project Office representatives, convene daily to discuss operational events or issues that effect safety. Events are evaluated for repetitive or programmatic implications and lessons learned.

The Kaiser-Hill PAAA Program Manager also reviews events and issues for potential repetitive or programmatic noncompliances. In addition, the Kaiser-Hill PAAA Program Manager maintains a log of screened potential noncompliances in the PASS. However, the PASS only contains a portion of the screened potential noncompliances. In some cases the screened potential noncompliances are entered into the PATS, maintained in hardcopy form by the POC, or recorded in one of several other approved databases for corrective action tracking (e.g., Radiological Improvement Report database). Redundancy of screened potential PAAA noncompliances in more than one of the above mentioned systems does occur. This overlapping and fragmented approach to screening potential PAAA noncompliances hinders the Kaiser-Hill ability to identify site-wide repetitive or programmatic issues. In addition, if an event or issue occurs and it is apparent to the POC that a PAAA noncompliance exists, the screening process is not performed nor documented. This streamlined process is not covered by procedure and hinders the Kaiser-Hill ability to track and trend screened noncompliances.

In reviewing the various sources for PAAA noncompliance screening, OE concluded that Kaiser-Hill is drawing from a number of different sources of operational data in performing its PAAA noncompliance screening. In addition, OE sought to determine the extent to which potential PAAA noncompliances are being captured by the Kaiser-Hill POCs for screening and the adequacy of the screening once performed. Prior to 2004, Kaiser-Hill was not screening potential PAAA noncompliances in accordance with guidance provided by OE. This deficiency is attributable to an additional significance screen that was added by Kaiser-Hill to OE established criteria. Of particular note was the significant number of Radiological Improvement Reports (RIR) that were not being screened prior to 2004. It is noted that this issue was also identified in the May 2002 PAAA Program Review conducted by OE. Although OE did observe a few examples of potential noncompliances that were not screened in 2004, OE concluded that since the beginning of 2004, Kaiser-Hill has demonstrated considerable improvement in the capturing of potential noncompliances for screening. Once captured, the OE review did not find any examples in which it disagreed with the results of the Kaiser-Hill PAAA noncompliance screen.

V. Evaluation for Reportability

For those issues in which it was determined that a PAAA noncompliance has occurred, as determined through the screening of issues against the applicable nuclear safety requirements, Kaiser-Hill POCs then evaluate these noncompliances for reportability into the NTS. If the POC determines that the noncompliance is not reportable then the associated corrective actions are tracked to closure and the noncompliance is analyzed for trends to identify potential programmatic or repetitive noncompliances. If the POC determines that the noncompliance is reportable to the NTS, the POC drafts an NTS report and forwards it to the Kaiser-Hill PAAA Program Manager for further review and processing.

The OE review of selected assessments, RIRs, and occurrence reports found that prior to 2004, Kaiser-Hill did not evaluate PAAA noncompliances for reportability into the NTS in accordance with established OE criteria. As with the screening process, Kaiser-Hill added additional significance criteria, which greatly increased the threshold for reporting noncompliances into the NTS. As such many events or issues occurring at the site were not reported into the NTS as would have been expected had the OE criteria for reporting been followed. In 2004, following the glovebox fire and associated Enforcement Action, Kaiser-Hill eliminated the use of the additional significance criteria for reporting (although not formally captured in procedure until August 16, 2004). A review of noncompliance reportability determinations following this change indicates that Kaiser-Hill has significantly improved its adherence to the OE established reporting criteria with only a few examples found where NTS reporting did not occur when expected. Of particular note is a weakness in the Kaiser-Hill reportability determination process for failures of safety class equipment. The execution of the Kaiser-Hill noncompliance evaluation process was done in a timely manner, and generally met OE expectations with exceptions of those noncompliances involving bioassay results or Unreviewed Safety Question Determinations.

VI. Cause Determination and Corrective Action Management

The Kaiser-Hill processes for root cause determination and corrective action management are contained in the following procedures and are integrated into the Kaiser-Hill PAAA program documentation previously described:

- *Cause Analysis Requirements Manual, MAN-062-CAUSEANALYSIS*, Revision 4, dated August 22, 2001
- *Corrective Action Process, 3-X31-CAP-001*, Revision 4, dated May 23, 2002.

A graded approach to root cause determination is accomplished typically using a direct deviation method or TapRoot™ for “Low Significance” events or issues and a more formal approach, using one or a combination of approved techniques (e.g., Phoenix Handbook, Change Analysis, Barrier Analysis, Fault Tree Analysis, Event and Causal Factors Charting, Management Oversight and Risk Tree), for “High Significance” events or issues. The *Cause Analysis Requirements Manual* requires that a formal cause analysis be used for NTS reportable noncompliances. The *Price-Anderson Amendments Act Program Manual* allows for flexibility in this regard by allowing a graded cause analysis or event investigation in lieu of a formal root cause analysis. Discussions with Kaiser-Hill personnel revealed that in most cases a formal root cause analysis is performed for NTS reportable noncompliances with a few exceptions noted. When a formal root cause analysis is performed at least one member of the analysis team is required to be formally trained in root cause analysis techniques. The results of the root cause analysis are documented in a formal report. It is from this report that the responsible manager develops the associated corrective actions. The Kaiser-Hill Vice-President reviews and accepts all root cause analysis reports.

Upon identification of an NTS reportable noncompliance, it is required that a Corrective Action Plan be prepared. Resulting corrective actions are entered into PATS or one of several other approved databases for corrective action tracking. Changes to the status of the noncompliance or corrective actions are formally processed using the *Status Revision/Completion Form*. When all corrective actions associated with the NTS report have been completed objective evidence for closure is provided to the Responsible Manager for final approval. Approximately one month following completion of corrective actions, a verification evaluation is accomplished to verify completion and effectiveness of implemented corrective actions. As part of the response to the noncompliance, the Responsible Manager is required to determine if any “generic implications” (extent-of-condition review) exist. The “generic implications” review considers the results of the causal analysis where those causes are likely to create a problem elsewhere on the site (e.g., other buildings, equipment, components, processes, or procedures).

A review of both NTS reportable and internally tracked noncompliances does not suggest that Kaiser-Hill is having a problem with recurrence of noncompliances, *implying* that the process used by Kaiser-Hill in conducting its root cause analysis and associated corrective action development has been effective.

VII. Trending for Repetitive and Programmatic Noncompliances

Kaiser-Hill does not have a procedure detailing requirements relative to trending and analysis of operational data. Rather, Kaiser-Hill integrates trending and analysis requirements in three other procedures/manuals in which this topic is appropriate. *The Safety Management Program (SMP)* process procedure requires that SMP owners evaluate their programs performance, report the results, and recommend actions for improvement. *Safety Analysis Center Process* procedure describes the methodology by which Kaiser-Hill reviews daily operational data to evaluate apparent cause, assign level of concern, and designate SMP owner. In addition, the SAC tracks and trends events or issues and shares lessons learned among project/program owners. The *Price-Anderson Amendments Act Program Manual* describes the use of the PASS, by POCs and PAAA Program Management, to track and trend noncompliances for programmatic or repetitive concerns.

The OE review concluded that the process by which Kaiser-Hill trends and analyzes data for the identification of repetitive or programmatic noncompliances lacks the maturity expected by OE. The determination of trends is largely accomplished through a manual review of available operational data. Formal periodic and comprehensive analysis of operational data to determine programmatic or repetitive trends is not obvious. There does not seem to be a logical and systematic approach to determine site-wide programmatic or repetitive issues other than the SAC, which must rely on operational memory to make this determination rather than a more sound analytical trending approach. The fact that Kaiser-Hill has a cumbersome and fragmented approach to documenting potential noncompliances and the fact the corrective actions are contained in several approved databases, hinder the Kaiser-Hill ability to effectively track and trend operational data for potential repetitive or programmatic noncompliances. However, it is noted that Kaiser-Hill has submitted a few programmatic or repetitive NTS reports since the initial PAAA Program Review conducted in May 2002, indicating that some trending and analyses for programmatic or repetitive issues is being accomplished.

VIII. Independent Assessment Program

The Kaiser-Hill independent assessment program is formally established in procedure *Conduct of Independent Assessment Activities*, 3-B52-IA-003, Version 7, dated June 30, 2004. Team Leaders conducting assessments are trained and qualified to the procedure *“Training and Qualification of Assessment and Surveillance Personnel.”* Personnel involved in the assessment are to be independent of the area being assessed. Scheduling and prioritization of assessments is conducted in accordance with the procedure *“Integrated Planning and Scheduling of Assessment Activities”* and is accomplished quarterly, allowing for flexibility in changes in priorities. Scheduling and prioritization of independent assessments is conducted in conjunction with the Executive Safety Review Board, which reviews assessment topics and schedule and provides feedback and direction concerning the focus of the assessments.

Over the past few years Kaiser-Hill had significantly reduced the number of personnel assigned to conduct independent assessments from 18 to 2. This reduction in staff greatly impacted the Kaiser-Hill ability to conduct the appropriate number of assessments needed to assure that item/service quality, work performance, program implementation, operation processes, past corrective actions, and compliance with procedures are being maintained at an acceptable level of quality. One of the issues identified by OE in its investigation of the 2003 glovebox fire was that the Kaiser-Hill assessment of its combustible control program was ineffective in identifying procedural deficiencies and the compliance status of the program. As result of this observation, and a change in management direction, Kaiser-Hill placed a reemphasis on its independent assessment program resulting in a considerable increase in matrix support staff being assigned independent assessment responsibilities. Recent assessments (four) have focused on effectiveness reviews of corrective actions resulting from the recent Enforcement Action.

IX. Management Assessment Program

The Kaiser-Hill management assessment program is formally established in the procedure *Self Assessment Program*, PRO-1576-SAP-001, Version 1, dated June 30, 2004. Managers conducting assessments are not required to be formally trained and qualified in conducting assessments. As with independent assessments, scheduling and prioritizing management assessments is conducted in accordance with procedure *Integrated Planning and Scheduling of Assessment Activities* and is accomplished quarterly, allowing for flexibility in changing priorities. Scheduling and prioritizing management assessments are conducted in conjunction with the Executive Safety Review Board which reviews assessment topics and schedule and provides feedback and direction concerning the focus of the assessments. Kaiser-Hill management assessments are conducted in several ways to include (1) focused management assessments which are periodic and planned to evaluate discrete programs, processes, or performance against specified criteria, (2) management directed management assessments which are initiated on emerging adverse performance trends or other indicators that warrant an immediate determination of process or programmatic condition within the project, and (3) SMP owners management assessments of the safety management area for which they are responsible.

The OE review of management assessments conducted by Kaiser-Hill and OE discussions with Kaiser-Hill personnel revealed that management assessments conducted prior to the 2003 glovebox fire were numerous but very shallow, limited primarily to work evolution observations, and added little value in terms of identifying and correcting deficiencies. This is illustrated by the fact that management assessments reviewed by OE from June 2002 to December 2003 resulted in no specific observations or findings. Following the glovebox fire increased emphasis has been placed on management assessments with a redirection of focus from observation of job evolutions to evaluation of broader management processes. The fact that managers conducting management assessments are not given formal training remains a concern.

X. Conclusion

The OE review determined that the Kaiser-Hill PAAA program **currently** meets DOE expectations and guidance. Several strengths and some weaknesses were identified as previously discussed. OE is disappointed with the Kaiser-Hill initial response to the May 2002, PAAA Program Review, but is pleased with the recent corrective actions taken by current Kaiser-Hill senior management to improve its PAAA program as well as its management and independent assessment programs. Given the current status of radiological hazards present at the site and the expected decline in these hazards in the near term, OE is reasonably confident that issues important to nuclear safety are being and will be captured. OE encourages Kaiser-Hill to continue and sustain its current efforts in improving its PAAA Program and Management and Independent Assessment programs.

The DOE Enforcement Policy *10 CFR 820, Appendix A* provides positive incentives for contractors who identify, report, and promptly and comprehensively correct nuclear safety noncompliances. The weaknesses identified in this report, if not corrected, could impact the application of enforcement discretion in any future enforcement action.