

DOE/EH - 0646



Westinghouse Savannah River Company



Westinghouse

**Report from the DOE
Voluntary Protection Program
Onsite Merit Review, September 18-20, 2000**



U. S. Department of Energy
Office of Environment, Safety and Health
Office of Safety and Health
Office of Regulatory Liaison

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Executive Summary

This report summarizes the Department of Energy Voluntary Protection Program (DOE-VPP) follow-up evaluation of the Westinghouse Savannah River Company (WSRC) by a Merit Review Team during September 18-20, 2000. Initial and Update onsite evaluations of this applicant, Westinghouse Savannah River Company (WSRC), were conducted on February 24-March 7, 1997, and on June 15-19, 1998, respectively. The Update Onsite evaluation conducted on June 15-19, 1998 identified an opportunity for improving employee involvement at WSRC. Accordingly, a Merit goal was proposed and accepted by the applicant regarding enhanced employee involvement.

Merit Goal on Employee Involvement

As documented in the previous DOE-VPP report; Westinghouse Savannah River Company: Report from the DOE Voluntary Protection Program Onsite Reviews, February 24-March 7, 1997 and June 15-19, 1998, DOE/EH-0591; a strong safety culture continues to exist at this site and all levels of employees feel empowered to voice safety concerns. The Initial Onsite Review Team and the Update Review Team found a pattern where workers seemed reliant on supervisors and/or managers to mitigate safety and health hazards. Employees were well trained in hazard recognition and actively utilized those skills in identifying hazards and/or potential hazards, however, they seemed reliant on supervisors to take corrective action(s). Besides generally relying on supervisors to correct problems, it was found that workers were generally not part of the team that would fix the problem. Accordingly, the Update Review Team noted this as an opportunity for improvement in the area of employee involvement. WSRC recognized this opportunity and accepted it as a goal to achieve Star status.

Evaluation Summaries

The Initial Review Team which was onsite February 24-March 7, 1997 concluded that WSRC met or surpassed all DOE-VPP requirements, with the exception of 12 minor findings and 5 recommendations. WSRC was asked to resolve the findings within 90 days. During a follow-up visit in January 1998, it was verified that all 90-day actions items assigned to WSRC were completed.

The Update Review Team, which was onsite June 15-19, 1998, determined that the applicant had an opportunity to enhance employee involvement and proposed that opportunity as a Merit goal for the applicant. The applicant recognized that attaining and sustaining VPP-STAR level performance for the employee involvement tenet at a large site with multiple layers of management and geographically dispersed personnel would be a significant challenge. Nevertheless, the applicant accepted this challenge as a Merit goal.

The Merit Review Team that was onsite September 18-20, 2000 focused on determining whether WSRC had successfully met this challenge and accomplished the Merit goal of enhancing employee involvement. The Merit Review Team found that WSRC has made significant improvements in the area of employee involvement. Interviews with workers indicated that they have “ownership” of identified hazards and feel empowered to address hazards within the scope of their procedural guidance. WSRC has made significant advancements in enhancing employee involvement including aspects of the work planning process and committee involvement, and in the general involvement of the front line worker throughout their program. Interviews of workers during the most recent onsite evaluation indicated that their input is solicited and incorporated appropriately, and that they are involved in the program as primary team members from start to finish. Worker involvement is now a proactive part of the program and process at WSRC. The input of front line workers is solicited in the development of procedures, and they are asked to review procedures after they have been developed and to suggest improvements and/or modifications. The enhancement of employee involvement by WSRC maximizes worker input by utilizing their fundamental knowledge of processes and associated hazards. It was the unanimous conclusion of the Merit Review Team that WSRC has met the Merit goal of enhancing employee involvement.

Introduction

This report summarizes the Department of Energy Voluntary Protection Program (DOE-VPP) follow-up evaluation of the Westinghouse Savannah River Company (WSRC) by a Merit Review Team during September 18-20, 2000. Initial and Update Onsite Evaluations of this applicant, WSRC, were conducted on February 24-March 7, 1997, and on June 15-19, 1998, respectively. The Update Onsite Evaluation conducted on June 15-19, 1998 identified an opportunity for improving employee involvement at WSRC. Accordingly, a Merit goal was proposed and accepted by the applicant regarding enhanced employee involvement. In each of the onsite evaluations, the site was evaluated against the program requirements contained in U.S. Department of Energy Voluntary Protection Program document, DOE-VPP Part I: Program Elements, DOE/EH-0433, to determine its success in implementing the tenets of the DOE-VPP.

Savannah River Site Overview

The SRS is owned by DOE and operated by an integrated team of contractors led by WSRC. The site is located approximately 25 miles southeast of Augusta, Georgia, and covers 198,344 acres (310 square miles), encompassing parts of Aiken, Barnwell, and Allendale counties in South Carolina, and bordering on the Savannah River. The site was constructed in the early 1950s to produce basic materials used in national defense programs. Since the early 1990s, facility operations have focused on national security work, environmental cleanup and waste management, and economic development and technology transfer initiatives.

The current Savannah River Site (SRS) mission involves:

- recycling and reloading tritium for the weapons stockpile;
- environmental cleanup and waste management;
- special nuclear materials storage, research and development, and technology transfer; and
- disposition of nuclear materials and facilities.

Westinghouse Savannah River Company

WSRC is responsible for the site's nuclear facility operations; Savannah River Technology Center; environment, safety, health, and quality assurance; and all of the site's administrative functions. The integrated team of contractors also includes Bechtel Savannah River, Inc. (BSRI), responsible for environmental restoration, project management, engineering, and construction activities; Babcock & Wilcox (B&W) Savannah River Company, responsible for facility documentation and decommissioning; and British Nuclear Fuel Limited (BNFL) Savannah River Corporation, responsible for the site's solid waste programs. About 16,000 people are employed at SRS, making it one of the largest employers in South Carolina. WSRC has been investigating participation in the DOE-VPP program since 1993. Prior to submitting their DOE-VPP application, the site participated in the DOE-VPP's Outreach Program and was partnered with Searle Pharmaceuticals of Augusta. The geographical proximity of the two plants was a positive factor in the match-up. Searle Pharmaceuticals participated in all aspects of WSRC's preparation for DOE-VPP status. Participation in the outreach program allowed WSRC to benchmark its safety and health programs and position itself to apply for DOE-VPP status. The primary purpose of the onsite reviews was to assess the site's implementation of systems and programs designed to meet DOE-VPP criteria.

Onsite Review Teams

Onsite reviews were conducted of WSRC by an Initial Review Team on February 24-March 7, 1997, by an Update Review Team on June 15-19, 1998 and by a Merit Review Team on September 18-20, 2000.

The Initial Review Team which was onsite February 24-March 7, 1997, was composed of 20 individuals, representing a diverse cross-section of the Department, and including an Occupational Safety and Health Administration (OSHA) VPP Regional manager. This Initial Review Team verified the information in the site's application by conducting more than 114 formal and informal interviews with site personnel, both managerial and non-managerial. The Initial Review Team concluded that WSRC met or surpassed all DOE-VPP requirements, with the exception of 12 minor findings and 5 recommendations. WSRC was asked to resolve the findings within 90 days. During a follow-up visit in January 1998, it was verified that all 90-day action items assigned to WSRC were completed.

The Update Review Team was onsite June 15-19, 1998. This was a six-member team that included managers and safety and health professionals with extensive DOE and OSHA VPP onsite evaluation experience. The Update Review Team conducted more than 75 employee interviews. This Team determined that the applicant had an opportunity to enhance employee involvement and proposed that opportunity as a Merit goal for the applicant. WSRC accepted this challenge as a Merit goal.

The most recent Merit Review Team was on-site September 18-20, 2000. This Team included two senior safety and health professionals from DOE headquarters assigned to the Office of Safety and Health and three senior safety and health professionals from the DOE-SR Operations Office, including one safety and health manager. The Merit Review Team interviewed 33 randomly selected employees from across the Savannah River Site. The employees interviewed represented a broad spectrum of occupations across the site.

Merit Goal on Employee Involvement

As documented in the previous DOE-VPP report: “Westinghouse Savannah River Company: Report from the DOE Voluntary Protection Program Onsite Reviews, February 24-March 7, 1997 and June 15-19, 1998,” DOE/EH-0591; WSRC accepted as a Merit goal the challenge to more effectively involve front line workers in the planning and development of work activities and increase worker participation on committees, job hazard analyses (JHAs), and investigations.

That report noted that employees were enthusiastic about safety and health at the site and those employees interviewed were generally knowledgeable about their safety and health responsibilities. However, interviews with employees showed a pattern among the workers that indicated a culture of mitigating safety and health hazards through supervisors. Evaluators found that this cultural norm involved two elements that deviated from a Voluntary Protection Program (VPP) STAR level employee involvement program. First, the workers indicated that they generally identified hazards to their supervisors and that supervisors directed corrections. Workers were generally not part of the team that would fix the problem. Secondly, workers indicated little ownership of identified hazards and a lack of empowerment to address hazards within their limited procedural perspective.

Some aspects of the work planning process, safety and health committee activities, and accident investigations were performed without the primary involvement of the front line worker. Front line workers were not asked for input in the development of procedures, but rather were asked to review procedures after they had been developed. Accordingly, the Merit goal was established to ensure that workers and professionals interact throughout these important processes, from start to finish, in an atmosphere of teamwork, with the aim of improving employee ownership through engagement.

Objectives for the Merit Goal

Having accepted this challenge as a Merit goal, WSRC undertook the establishment of specific objectives to accomplish their goal. Given that the DOE Integrated Safety Management Systems (ISMS) is the mandated “corporate” safety and health policy for all DOE sites, WSRC utilized the five core functional areas of ISMS as guidance for the establishment of worker involvement criteria or objectives.

The WSRC VPP Core Team developed specific performance objectives or criteria to enhance the Employee Involvement portion of the Voluntary Protection Program at Savannah River. Because SRS is a “nuclear” work site having many special materials and processes, consideration was taken in regard to the rigor and control that must be maintained for a site of this nature to operate safely without endangering the workers, the public or the environment. Accordingly, the Employee Involvement Criteria developed by the WSRC VPP Core Team and accepted by the Office of Safety and Health, EH-5, are as follows:

- WSRC Employee Involvement Criteria -

Define Scope of Work

Employees (operations as well as support organizations) identify problems or issues associated with current processes or the work environment in general.

Employees participate in walkdowns to assess the "problems"/operational difficulties and provide input into the resolution of those issues.

Analyze the Hazards

(JHA team(s) membership consists of first line supervisor or designee, active front-line workers experienced in the job that will be analyzed, and additional subject matter experts as required.

Workers communicate and discuss hazards and controls associated with their jobs and provide mitigating information to management for JHA.

Front line workers who prepare JHAs are familiar with the requirements of the JHA procedure.

Employees provide input into procedures with respect to the existing hazard and mitigation sections.

Develop and Implement Hazards Controls

Employees review work instructions and procedures for usability prior to beginning work.

Employees participate in field validation and first-time performance exercises.

When front-line workers encounter an abnormal situation in the field relative to the procedure or the performance of work they:

- Have the latitude to stop the work in progress,
- Have the ownership to place the work area/situation in a safe condition, and,
- Participate with management and facility personnel in the resolution of the condition within the framework of procedural guidance.

Employees actively participate in pre-job briefings (outside of simply attending).

Front line workers are generally included early in the preparation and review process of Work Control Packages. When possible, work planners interface directly with first line supervisors and front line workers. Also, front line workers walk down the system prior to the development of the Work Package.

Division teams are implemented which employ principles from the Fix-It-Now (FIN) and Enhanced Work Planning programs.

Perform Work Within Controls

Employees possess and utilize "stop-work authority".

Employees have the latitude to use craft skills and decision-making based on their training, qualifications and certifications within the framework of procedural guidance.

Employees participate in facility and site-level assessments of safety performance.

Employees actively participate in the Safety Observer program, either as trained observers or as willing employees who are observed.

Senior Staff Safety/Housekeeping Audit teams include facility manager, housekeeping committee member (where applicable), area safety observer, and front-line workers in addition to the safety engineer and the senior staff member.

Manager/Supervisor Audit teams include area safety and health committee members, front-line workers, safety observers, and other subject matter experts as required.

Provide Feedback and Continuous Improvement

Employees provide direct feedback on procedure content.

Incident review teams include injured workers, peer workers, safety engineers, immediate managers and subject matter experts as required. Front-line workers actively participate in the development of corrective actions to prevent recurrence.

Employees actively participate in post-job briefings and critiques to provide input into the successes and opportunities for improvement for subsequent similar tasks.

Interdivisional benchmarking teams of front-line workers are established to identify ways to increase employee involvement in work planning and hazard analysis.

Division representatives on Safety and Health Committees communicate that front-line workers can send issues through their division representative to those committees for resolution.

Observations and Findings

The Merit Review Team that was onsite September 18-20, 2000 focused on determining whether WSRC had successfully met their challenge and accomplished the Merit goal of enhancing employee involvement. The Merit Review Team focused their efforts on determining the current level of employee involvement at WSRC as compared to the past levels of employee involvement found by the other VPP evaluation teams. As stated earlier in this report, the criteria or objectives that the Team was looking for had been developed earlier by WSRC and its VPP Core Team with mentoring assistance from the EH-51. During this visit, the Merit Review Team interviewed 33 randomly selected employees from across the Savannah River Site. This sample provided an excellent cross-section of personnel with a host of different responsibilities and missions. In addition, the Merit Review Team had the opportunity to discuss enhancement of employee involvement with the entire WSRC VPP Core Team and with selected managers and/or supervisors who attended a briefing of this team. The Merit Review Team utilized these briefings, employee interviews and written material and documents, submitted by WSRC over the past year with regard to program improvements, to reach their final conclusion.

Employee interviews revealed an improved level of employee involvement since the last VPP evaluation. All interviewees readily understood Stop Work Authority and admitted that they felt comfortable using it. Workers described cases where they had exercised Stop Work Authority and had received full management support. Those employees who hadn't exercised this authority felt that their management would fully support them if they had to stop work due to a safety concern. Workers understand that they are the first lines of defense to unsafe conditions and that they are empowered to stop work and take corrective action. There were several examples from the interviewee(s) where they had been involved in jobs that required a stop work or a reassessment of the initial job task. A rigger cited a recent example of where the workers on his team felt that the maintenance of an overhead crane would be unsafe due to the lack of proper lighting on top of the crane where they would be working. The workers informed management of the situation and the job was put on hold until proper lighting could be put in place. When the situation was beyond the means of the individual to mitigate, the workers interviewed felt free to voice safety concerns to management and were confident that corrective actions would be taken.

The workers interviewed knew that their actions or reactions to an unsafe condition depended upon the type of condition and facility environment where the unsafe condition was found. SRS is a "nuclear" work site having many special materials and processes. Consideration must be given in regard to the rigor and control that must be maintained at a site of this nature, to operate safely without endangering the workers, the public or the environment. It is essential that workers are aware of the known and potential hazards; but more importantly, they must understand what independent hazard corrective actions they can and should take, and what actions require supervisory and/or management decisions. The workers interviewed understood well the limits of their independent ability to take corrective actions.

Overall, employees were very knowledgeable about the site safety program and spoke highly of the benefits of the Safety Observer Program as well as the newly instituted Behavior-Based Safety training initiative. A number of employees mentioned their involvement in the JHA process and the positive effect it has had on their work environment. Another example of increased employee involvement cited by most employees was FIN Program, which gives employees the authority to provide on-the-spot solutions, where appropriate. Most employees stated that they feel safer at work than they do at home, due to the emphasis that WSRC places on safety. The Merit Review Team concluded that WSRC has demonstrated that front line workers are effectively involved in work planning, on safety committees, on Job Hazard Analysis teams, and in the identification of safe work practices.

In reviewing the Employee Involvement Criteria developed by the WSRC VPP Core Team and discussing the employee involvement improvements made during the past year with the VPP Core Team, briefing officials and the employees interviewed, the Merit Review Team made the following observations regarding the specific criteria that was established:

- **Define Scope of Work** – Employees are fully involved in identifying problems or issues associated with current processes and are part of the “team” that plans and implements corrective actions. Interviewees described this involvement and the use of the Fix It Now program, the lessons learned program and the “Ideas” program. Additionally, employees are routinely engaged in walk-downs to assess problems and provide input into the resolution of issues. Interviewees described the newly instituted Behavior Based Safety training initiative and a new pilot training program where employees are trained utilizing mock-ups that simulate actual working conditions.
- **Analyze the Hazards** - Many first-line workers offered that they participated in the development or review of JHAs for their work activities. One employee, associated with the procedure writing function of his organization, indicated that he included first-line workers in associated JHA’s, as well as development and walk-downs of work procedures.
- **Develop and Implement Hazard Controls** - Workers have numerous opportunities to assist in the development and implementation of controls, including the suggestion program, input through safety committee activities, and JHA development. WSRC is also emphasizing the importance of “positive immediate feedback” for employees who offer suggestions. An example offered was identification of the need for weld inspection training for radiation technicians and the need to reduce radiation exposures to weld inspection personnel at the FB line. The workers suggested the use of remote video equipment to inspect welds, thereby providing greater protection for personnel by reducing the potential for radiation exposures and uptakes.
- **Perform Work Within Controls** - Almost all the employees interviewed participate in safety and health audits and workplace walkthroughs (with and without management) to ensure a safe and healthful workplace. Those that had not participated recently acknowledged that there was "plenty of opportunity" to participate, including the "Safety

Observer" program, "Behavior Based Safety" process, and routine safety committee meetings (including committee walkthroughs), etc.

- **Provided Feedback and Continuous Improvement** - The VPP Core Team made an extensive effort to understand worker perceptions of the site safety and health program. To accomplish this, the VPP Core Team interviewed approximately 700 WSRC workers to out find what programs and procedures were working and where there were opportunities to improve. While WSRC continues to use safety and health statistics to track injury and illness data, the interview and analysis process provided valuable insights on how to continue improvements started at the onset of their pursuit of the DOE-VPP Star.
- Development of a VPP Core Team, and the utilization of employee interviews and analysis to identify improvement opportunities appear to be key elements in WSRC's enhancement of employee involvement, and may prove extremely useful in achieving continuous improvement, as required by the DOE-VPP.

Anecdotal Information

Employee interviews provide an opportunity to collect oral accounts of how programs and procedures actually function in the workplace. By collecting such factual details of the functioning of a program, one can better determine the completeness of implementation, as well as the effectiveness of the program in terms of actual application to the workplace. The following anecdotes and quotations are included here to give the reader an accurate picture of the WSRC safety program as described by the workers:

- The workers in the burial grounds developed a special tool to open B-25 waste boxes that were closed for long term storage. Originally, it was intended that when the B-25 boxes were closed and sealed they would not be opened again. However, because of a waste reduction/sorting program, workers have to reopen these boxes by removing approximately 10 clips around the lid. Before developing a custom made tool for this task, workers had to use a hammer and screwdriver to remove the clips and open the containers. This process created a potential hazard because the screwdrivers would frequently break. At the suggestion of workers, a special tool was developed for this process to eliminate the potential hazard.
- Through the use of the Job Hazard Analysis (JHA) process, workers identified safety requirements that were necessary for taking samples. Because of the importance of the samples, it was later recognized that safety requirements identified in the JHA also needed to be included into the Authorization Basis for the facility and a Technical Surveillance Requirement (TSR) was developed.
- One worker stated that you know that the emphasis on safety at the site is catching on when you are in the Walmart parking lot in Aiken, S.C. and you hear someone honk twice before backing up. “You know that person works out at the site.” (The site policy for backing a government vehicle is to first honk the horn before backing.)
- An office worker stated that she shares the safety newsletter with her family. She is also thankful for the recent (9/16 –17/00) Family Days that was held at SRS. She was able to show her teenage grandson the importance of electrical safety through displays that were set up for the event. She felt that the safety message really got through to him when he was able to see it for himself.
- One of the Core Team Members brought up a situation in which an employee in her facility had heard a noise and smelled smoke, and searched out the problem and worked with her supervision to correct the problem. Due to a power surge, a resistance welder had come on and some plastic near the welder had melted, producing the smell. Her quick thinking coupled with management support probably prevented a fire in the facility. As a result of her actions she was awarded employee of the month and given parking space (a very coveted prize on the SRS site).

- One employee stated that the site posture on safety has affected his life at home as well. When he works in the yard, or in his shop, he always makes sure to use his protective equipment. He also stated that safety has become so much a part of his life that when he sees other people working in their yards, he automatically does a safety analysis in his mind, and picks out all the unsafe conditions and actions that he sees.
- Another employee commented that while some employers are concerned with your safety on-the-job, they don't concern themselves with off-the-job safety. She used to feel like the company was invading her privacy, but she has come to realize that they are concerned about employees being safe at home, as well as at work. She now takes home safety bulletins and newsletters to share with her family. She says they find them pertinent as well as informative and entertaining.
 - “There’s always someone who will listen to you if you have a safety concern.”
 - “Your opinion counts.”
 - “We’re all safety observers, whether we’re officially in the program or not.”
 - “I feel safer at work than I do at home.”
 - “A lot of the things I learn here, I can take back home to my family.”
 - “This is the safest place I’ve ever worked.”

Team Conclusion

Based on the information acquired during the most recent onsite visit, the Merit Review team unanimously concludes that WSRC has met the assigned MERIT goal of enhancing employee involvement.

Appendix: DOE-VPP Merit Reevaluation Team for WSRC

Name	Organization/Position	Telephone/fax/e-mail
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