



Memorandum from the Office of the Inspector General

August 11, 2017

Michael C. Easley, BRF 1A-CTT

**FINAL REPORT – EVALUATION 2017-15483 – ORGANIZATIONAL EFFECTIVENESS
FOLLOW-UP – BULL RUN FOSSIL PLANT**

Attached is the subject final report for your review and information. No further action is needed at this time.

If you have any questions, please contact Noel K. Kawado, Senior Auditor, at (865) 633-7348 or Lisa H. Hammer, Director, Evaluations – Organizational Effectiveness, at (865) 633-7342. We appreciate the courtesy and cooperation received from your staff during the evaluation.

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OIG File No. 2017-15483



Office of the Inspector General

Evaluation Report

To the Plant Manager,
Bull Run Fossil Plant

ORGANIZATIONAL EFFECTIVENESS FOLLOW-UP – BULL RUN FOSSIL PLANT

Evaluation Team
Noel K. Kawado
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Evaluation 2017-15483
August 11, 2017

ABBREVIATIONS

BRF	Bull Run Fossil Plant
CR	Condition Report
FY	Fiscal Year
GC	Generation Construction
H&S	Health and Safety
OIG	Office of the Inspector General
PO	Power Operations
TVA	Tennessee Valley Authority
VP	Vice President

SYNOPSIS

The Office of the Inspector General (OIG) previously conducted an evaluation of Bull Run Fossil Plant¹ (BRF) to identify operational and cultural strengths and areas for improvement that could impact BRF's organizational effectiveness. Our final report identified several operational and cultural areas for improvement along with recommendations for addressing those issues. We subsequently received BRF's management decision on June 30, 2016. The objective of this follow-up evaluation was to assess management's actions in response to our recommendations from our initial organizational effectiveness evaluation.

In summary, we determined the actions taken by BRF appear to address most areas for improvement identified during our initial organizational effectiveness evaluation, and for the most part, individuals reported seeing positive changes at BRF. Some concerns remain related to specific areas in the work management process, including planning of work and communication of work order and condition report (CR) statuses. However, resolution of these concerns relies on funding decisions that are generally outside of BRF's control.

BACKGROUND

At the time of our last review, BRF's mission, in support of the Tennessee Valley Authority's (TVA) overarching mission, was "to provide low cost, reliable generation and ancillary services while keeping our people safe and ensuring compliance with environmental regulations." In our previous organizational effectiveness evaluation of BRF, we identified several operational and cultural areas for improvement along with recommendations for addressing those issues. Specifically, we recommended the Vice President (VP), East Region Coal and Gas, working with the BRF Plant Manager:

1. Verify safety-related concerns are coded properly in the system for prioritization and tracking purposes. Ensure personnel responsible for coding work orders do not have potential conflicts with their Performance Review and Development goals.
2. Review overtime hours to determine the safety impacts and if there should be limits to reduce fatigue.
3. Consider providing job-specific training for coordinators.²

¹ Evaluation Report 2016-15357, Bull Run Fossil Plant Organizational Effectiveness, March 30, 2016.

² This recommendation pertained to perceived deficiencies in the way work was being scheduled and planned.

4. Continue with actions implemented since our review started.³ Modify these plans as necessary to include (a) ongoing methods for obtaining feedback, (b) an ongoing effective resolution process, and (c) key indicators to gauge the effectiveness of the actions.

We also recommended the Senior VP, Power Operations (PO):

1. Work with Information Technology to determine if modifications can be made to Maximo's⁴ automated e-mails for CRs to include status updates and/or related work orders for tracking purposes.
2. Review the nine-group scheduling⁵ costs versus benefits to determine if it is the right course of action for Fossil Operations.
3. Hold discussions with employees regarding coal industry changes and consider instituting a transition program to help prepare employees for the future and potential plant closures.
4. Review the injury reporting process and solicit feedback from employees to ensure employees feel safe to report all injuries.
5. Implement steps to track the costs associated with rework at all fossil plants.

In response, TVA provided its management decision and action plan on June 30, 2016. This report covers our assessment of BRF's actions taken to address areas for improvement from our initial organizational effectiveness evaluation. Please see the Observations section below for a detailed discussion of the areas for improvement previously identified and management's actions.

OBJECTIVE, SCOPE, AND METHODOLOGY

Our objective was to assess management's actions in response to our recommendations included in our initial organizational effectiveness evaluation. To achieve our objective, we:

- Reviewed Evaluation 2016-15357 in conjunction with TVA's management decision dated June 30, 2016, to identify planned and completed actions.

³ These actions included: (1) having one dedicated Plant Manager at BRF, (2) increasing plant staffing, (3) reinforcing safety standards and expectations, (4) addressing work management issues, (5) improving equipment condition issues, (6) using a project integration manager to streamline the project planning process, and (7) providing management with tools and opportunities to develop leadership skills and build trust with employees.

⁴ Maximo is an asset maintenance system used, among other things, to initiate and track the status of work orders associated with the maintenance of plant assets.

⁵ Nine-group scheduling is a staffing tool used by BRF for its Assistant Unit Operators and Unit Operators, where individuals in those job positions are divided into nine groups and rotate to a different supervisor at defined intervals.

- Developed questions for management and employees designed to obtain information and perspectives on BRF's completed actions.
- Conducted 37 interviews during May 2017 to obtain perspectives on BRF's actions. These individuals included management-level employees (BRF's Plant Manager, 5 of his direct reports and 2 other management-level employees), 6 supervisory-level BRF employees, and 23 other BRF employees. We judgmentally selected individuals for interviews based on the nature of the previous findings and adequacy of coverage among the BRF departments.
- Assessed data and documentation (through July 2017) associated with BRF's actions.

This evaluation was performed in accordance with the Council of the Inspectors General on Integrity and Efficiency's *Quality Standards for Inspection and Evaluation*.

OBSERVATIONS

In general, based on interview results and/or documentation reviewed, we noted positive changes at BRF. These included: (1) an enhanced focus on safety, safety expectations, and safety work orders; (2) improvements in certain aspects of the work management process (including support for coordinators and the identification and coding of rework); (3) plans for increasing plant staffing in Operations and Maintenance; (4) efforts to remediate existing equipment/asset issues; (5) implementation of a Senior Manager, Plant Integration, to serve as the interface between PO and Generation Construction (GC); and (6) improved trust between plant management and employees. See Figure 1 on the following pages for our detailed observations.

FIGURE 1: MANAGEMENT'S ACTIONS AND OUR OBSERVATIONS

Opportunities for Improvement	Management's Actions	OIG's Observations
Safety and Safety Expectations	<p>BRF management stated:</p> <ul style="list-style-type: none"> • They would minimize and equally share overtime among employees to prevent safety concerns from arising. 	<p>More than half of employees we interviewed that provided an opinion on this area indicated that staffing/overtime had improved or overtime was minimized. Based on information obtained from TVA, we noted that total overtime hours at BRF had decreased by approximately 34 percent from fiscal year (FY) 2015 to FY2017 (thru July 12, 2017).</p> <p>Since our original evaluation, the number of BRF employees has increased from 89 as of October 21, 2015, to 100 as of June 6, 2017. In addition, according to the Human Resources Generalist assigned to BRF, additional positions were approved for posting on June 5, 2017. These included 7 positions in Maintenance and 3 positions in Operations.</p>
	<ul style="list-style-type: none"> • They would reinforce safety standards through increased management/employee interaction to clearly communicate expectations. 	<p>Most employees interviewed stated safety expectations were being communicated by plant management through small group/crew meetings, all-hands meetings, and/or pre-job briefings.</p>
	<p>PO management stated they would continue to stress the importance of timely and transparent reporting of any safety incident.</p>	<p>We reviewed presentation materials made to BRF staff and noted safety was discussed in most of those presentations. In addition, most employees interviewed stated they felt comfortable reporting safety incidents.</p>
Safety Work Orders	<p>BRF management stated:</p> <ul style="list-style-type: none"> • The PO Work Management process would be utilized to ensure safety and other concerns identified are screened, coded, prioritized, planned, and executed in a manner consistent with standard processes. 	<p>More than half of employees interviewed indicated there have been improvements in the way safety concerns are screened, coded, prioritized, planned, and executed.</p> <p>Although the management decision did not address our original recommendation to ensure there were no conflicts between individuals responsible for coding work orders related to safety and Performance Review and Development goals, we nonstatistically selected the performance documents of 4 individuals⁶ for FY2016 and FY2017 and verified none of the performance goals in those documents were based on how work orders were coded.</p>

⁶ Our sample was selected from the population of individuals who were responsible for coding work orders. According to PO's Standard Programs and Processes 07.001, Power Operations Work Management, Maintenance Coordinators, Work Week Managers, and Support Program Managers are responsible for coding work orders.

Opportunities for Improvement	Management's Actions	OIG's Observations
Safety Work Orders (cont.)	<ul style="list-style-type: none"> They were reviewing the safety backlog with the Health and Safety (H&S) Committee to ensure concurrence with priorities being set. 	<p>Most people interviewed from the H&S Committee stated the safety backlog was being reviewed, and the right priorities were being set. We reviewed the H&S Committee minutes from April 2016 through March 2017 and noted the safety backlog was being discussed regularly.</p>
Work Management Process	<p>BRF management stated:</p> <ul style="list-style-type: none"> They would pilot implementation of the work management system to reduce and eliminate issues that cause crew frustration around inadequate planning and scheduling, unavailability of parts and tools, and lack of employee input in work prioritization. 	<p>While there were still some concerns with the work management process, more than half of the individuals that provided an opinion on this area indicated the work management process, in general, had improved since our initial evaluation. Some individuals stated there is a better understanding of the process. This could be attributable, in part, to the work management training materials that contained chronological information about the process itself and the roles and responsibilities of all individuals involved.</p>
	<ul style="list-style-type: none"> Issues related to delayed work because of lack of planning and tools/materials have been corrected. 	<p>Approximately half of the employees we interviewed stated that work is still being scheduled without adequate planning. Some employees brought up concerns related to the frequent occurrences of emergent equipment/asset issues. This may stem from equipment/asset degradation issues at BRF, which can negatively impact work planning. However, remediation of equipment/asset degradation is generally outside of BRF plant management's control because funding decisions for such remediation are made above the plant level.</p>
	<ul style="list-style-type: none"> A third-party contractor would facilitate the training and implementation of the work management process at all levels at the site. 	<p>According to BRF management, as of April 11, 2017, 93 out of 97 BRF employees had participated in the work management training. Approximately half of the employees we interviewed recalled taking the training. We noted training materials provided detailed information about the work management process and roles and responsibilities.</p>
	<p>PO management stated they would work with Information Technology to determine if modifications can be made to Maximo's automated e-mails for CRs to include status updates and/or related work orders for tracking purposes.</p>	<p>Approximately half of the individuals we interviewed stated that communication of the statuses of CRs and/or work orders has not improved. According to BRF personnel, automated e-mail notifications only occur when a CR is converted to a work order, and the CR is closed out. According to the BRF Plant Manager, the Maximo package TVA currently uses does not have other automated e-mail capabilities, and TVA would need to purchase additional software from Maximo to have them enabled for TVA users.</p>

Opportunities for Improvement	Management's Actions	OIG's Observations
Coordinator Training and Staffing	<p>BRF management stated:</p> <ul style="list-style-type: none"> • They would provide more on-the-job training for coordinators, as well as other plant employees, during the work management initiative with the assistance of a third-party contractor. 	<p>As previously discussed, training on the work management process was attended by a majority of BRF employees (including all Maintenance Coordinators), and approximately half of the employees we interviewed recalled taking the training. The associated training materials we reviewed contained information relevant to the scheduling and planning processes.</p>
	<ul style="list-style-type: none"> • They would hire 2 additional Coordinators in order to allow the team to share the load for the work package planning, parts ordering, and contractor oversight responsibilities. 	<p>Since our initial evaluation, BRF has hired 2 additional Coordinators (1 in Maintenance and 1 in Outage). According to the BRF Plant Manager, in the past, the Maintenance Coordinators handled both maintenance and outage coordination work. Currently, the Outage Coordinator works exclusively on outage work.</p>
	<ul style="list-style-type: none"> • They would work with the Programs and Performance and Technical Training organizations to assess the feasibility of utilizing a mentor relationship with experienced coordinators as an additional option to help close knowledge gaps. 	<p>According to the BRF Plant Manager, at the time we performed our fieldwork, this action had not been implemented due to staffing constraints that were outside BRF's control. However, during our exit conference, the BRF Plant Manager stated efforts had recently begun to implement the mentorship program. The intent of the program is for experienced Coordinators to mentor and provide on-the-job training to new/incoming Coordinators to help them integrate into their new role. Currently, BRF is piloting this program with a BRF employee who has expressed an interest in becoming a Coordinator, which will allow them to better define the program. BRF intends to have a formal plan put in place by the end of calendar year 2017 that can be used by any Plant or Maintenance Manager that comes through BRF when a vacancy and new hire occurs.</p>

Opportunities for Improvement	Management's Actions	OIG's Observations
Rework	<p>BRF management stated they would fully utilize the PO Corrective Action Plan process that allows for CRs to be initiated and coded through Maximo in a way that captures all rework issues.</p>	<p>More than half of the individuals we interviewed that commented⁷ on whether rework had improved believed the identification of rework and/or coding of rework in Maximo had improved or stated they had no concerns with rework.</p>
	<p>PO management stated when a quality issue arises that requires rework, it is generally captured for review and the learnings from the event are shared across the fleet. In addition, PO management stated the vast majority of contractor rework is covered under warranty, and rework caused by internal organizations is reviewed with the specific organization to improve the service that is delivered and to reduce costs going forward. PO stated it would continue to focus on this area.</p>	<p>A BRF manager stated they have been tracking rework based on whether original work was performed by TVA or contractor personnel and have been sharing those results with BRF employees. To verify, we obtained a listing of rework from BRF management as of May 8, 2017. The listing contained the associated CR number, originator group, and summary description of the issue.</p>
Plant Staffing	<p>BRF management stated they would increase plant staffing, from an approved headcount of 81.5 in 2014 to 110 in 2016, to support base load dispatchable unit mission.</p>	<p>As previously stated, since our original evaluation, the number of BRF employees has increased from 89 as of October 21, 2015, to 100 as of June 6, 2017. In addition, according to the Human Resources Generalist assigned to BRF, additional positions were approved for posting on June 5, 2017. These included 7 positions in Maintenance and 3 positions in Operations.</p>
	<p>PO management stated they would review the shift schedules for Operations at all TVA coal plants and determine, by the end of FY2016, which shift rotations are appropriate.</p>	<p>According to the VP, Coal and Gas Operations, changes to the nine-group shift schedule were considered and discussed between management and the trades and labor employees; however, no consensus had been reached. The VP, Coal and Gas Operations, stated that future headcount changes may require revisiting this area.</p>
Equipment Condition	<p>BRF management stated equipment condition improvements and project funding prioritizations are in progress and ongoing with the intent of working through the approved BRF recovery plan by the end of FY2020.</p>	<p>We reviewed BRF's "Implementation Schedule" to address major equipment/asset issues. As of March 31, 2017, BRF had planned 14 major equipment/asset projects,⁸ with 11 having estimated implementation dates ranging from FY2017 through FY2023 and 3 with no estimated implementation dates.</p>

⁷ Excluding individuals who stated they did not know whether it had improved.

⁸ Six of the 14 projects were unfunded as of March 31, 2017. Three additional equipment/asset issues had already been addressed during FY2010 through FY2016.

Opportunities for Improvement	Management's Actions	OIG's Observations
Coordination With Other TVA Organizations	PO management stated a project integration manager would be put in position to apply lessons learned from BRF and others to integrate into future project planning iterations.	The PO organization chart, as of May 4, 2017, includes a Senior Manager, Plant Integration, who reports to the VP, Generation Services. According to the VP, Coal and Gas Operations, this position will be the interface between PO and GC. This position will be responsible for integration and execution of major new projects in PO and facilitate good turnover of projects from GC to PO.
Trust	<p>BRF management stated:</p> <ul style="list-style-type: none"> • They would consistently coach management employees on how to improve interactions with employees to continue to build trust within the site between management and represented employees. 	The majority of individuals (management and employees) we interviewed stated either having no trust concerns between management and employees or that trust between plant management and employees had improved. In addition, the majority of individuals we interviewed stated they did not have any concerns with plant morale or believed that plant morale had improved since our initial evaluation.
	<ul style="list-style-type: none"> • They would utilize TVA-sponsored executive coaching tools to help facilitate better communication with employees. 	Most management personnel we interviewed stated the coaching tools that were introduced were helpful in facilitating more effective communications with employees.
	<ul style="list-style-type: none"> • They would utilize middle management engagement meetings to develop leadership skills. 	Similarly, most management personnel we interviewed indicated engagement meetings were helpful in developing leadership skills.
	PO management stated they would continue to work with employees to educate and prepare them for the transition occurring within TVA's coal fleet.	<p>Most employees we interviewed stated there has been more communication related to the coal industry and specifically, plans for BRF.</p> <p>We also reviewed presentations made by BRF and/or PO management that included the following discussion topics: safety, fleet staffing and workforce planning, changes in the utility industry affecting TVA, and BRF operational information.</p> <p>Most employees that provided an opinion on this area reported having more interaction with plant management and PO management.</p>

In summary, the actions taken by BRF management appear to address most areas for improvement identified during our initial organizational effectiveness evaluation. Some concerns remain related to specific areas in the work management process (planning of work and communication of work order and CR statuses). However, resolution of these concerns relies on funding decisions that are generally outside of BRF's control. We encourage management and employees to continue their efforts to maximize the organizational effectiveness of BRF.