



Memorandum from the Office of the Inspector General

April 14, 2022

Michael S. Cashon

**REQUEST FOR MANAGEMENT DECISION – EVALUATION 2022-17335 –
ORGANIZATIONAL EFFECTIVENESS – ALLEN INTEGRATED SITE**

Attached is the subject final report for your review and management decision. You are responsible for determining the necessary actions to take in response to our findings. Please advise us of your management decision within 60 days from the date of this report. In accordance with the Inspector General Act of 1978, as amended, the Office of the Inspector General is required to report to Congress semiannually regarding evaluations that remain unresolved after 6 months from the date of report issuance.

If you have any questions or wish to discuss our findings, please contact Andi R. McCarter, Senior Auditor, at (423) 785-4831 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.

David P. Wheeler
Assistant Inspector General
(Audits and Evaluations)

ARM:KDS

Attachment

cc (Attachment):

TVA Board of Directors
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OIG File No. 2022-17335



Office of the Inspector General

Evaluation Report

To the Manager–Integrated
Combined Cycle and Combustion
Turbine Site, Allen Integrated Site

ORGANIZATIONAL EFFECTIVENESS – ALLEN INTEGRATED SITE

Evaluation Team
Andi R. McCarter
Jessica L. Monroe

Evaluation 2022-17335
April 14, 2022

ABBREVIATIONS

Allen	Allen Integrated Site
CC	Combined Cycle
CT	Combustion Turbine
FY	Fiscal Year
PM	Preventative Maintenance
PO	Power Operations
SHRM	Society for Human Resource Management
TVA	Tennessee Valley Authority

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Evaluation 2022-17335 – Organizational Effectiveness – Allen Integrated Site

EXECUTIVE SUMMARY

Why the OIG Did This Evaluation

Organizational effectiveness, as defined in this evaluation, is the ability of an organization to achieve its mission and goals. Due to the importance of alignment between strategy, team engagement, and operational performance, the Office of the Inspector General is conducting organizational effectiveness evaluations of business units across the Tennessee Valley Authority (TVA). This evaluation focuses on Allen Integrated Site (Allen), which is an organization in TVA’s western region under the Gas Operations business unit within TVA’s Power Operations organization.

Allen, located near Memphis, Tennessee, includes a combined cycle (CC) site and a combustion turbine site (CT).ⁱ Allen CC has a total plant capacity of 1,106 megawatts. In addition, Allen combustion turbine, with a total generating capacity of 456 megawatts, has fast-start capability and is capable of remote operation. The objective of this evaluation was to identify factors that could impact Allen’s organizational effectiveness.

What the OIG Found

During the course of our evaluation, we identified positive behavioral factors, including relationships with team members and business units outside Allen; however, we also identified behavioral concerns with two managers. In addition, we identified operational factors needing improvement related to (1) perceptions of ineffective work management, (2) fire alarm system repairs, and (3) site security and access concerns. Management is addressing some of these concerns by implementing a Gas Operations’ initiative to address work management, overseeing fire alarm system repairs, and submitting documentation to upgrade site security. Based on our observations, we assessed Allen’s level of risk related to behaviors as medium and operations as low. Ratings are reflected in the table below.

	Low Risk	Medium Risk	High Risk
Behaviors		X	
Operations	X		

ⁱ CT units ignite a mixture of air and fuel to create hot combustion gases that expand through turbine blades connected to a generator to produce electricity. CC units initially operate the same as CTs but also capture heat from the gas turbines, convert it to steam, and use it to produce power.



Evaluation 2022-17335 – Organizational Effectiveness – Allen Integrated Site

EXECUTIVE SUMMARY

What the OIG Recommends

We recommend Gas Operations' management take action, or continue actions, to address (1) behaviors of some managers, (2) perceptions of ineffective work management, (3) fire alarm system repairs, and (4) site security and access concerns.

TVA Management's Comments

Gas Operations' management agreed with the recommendations. See Appendix B for TVA management's complete response.

BACKGROUND

Organizational effectiveness, as defined in this evaluation, is the ability of an organization to achieve its mission and goals. Due to the importance of alignment between strategy, team engagement, and operational performance, the Office of the Inspector General is conducting organizational effectiveness evaluations of business units across the Tennessee Valley Authority (TVA). This evaluation focuses on Allen Integrated Site (Allen), which is an organization in TVA's western region under the Gas Operations business unit within TVA's Power Operations (PO) organization.

Natural gas generation has taken on a larger role in the TVA generation mix in an effort to move TVA towards a more diverse and adaptable generation portfolio. According to TVA's 2020 annual report, TVA's gas generation portfolio has grown from 7 percent in fiscal year (FY) 2005 to 28 percent in FY 2020. TVA's natural gas generation includes eight combined cycle (CC) sites and nine combustion turbine (CT) sites.¹

Allen, located near Memphis, Tennessee, includes a CC site and a CT site. Allen CC has a total plant capacity of 1,106 megawatts. In addition, Allen CT, with a total generating capacity of 456 megawatts, has fast-start capability and is capable of remote operation.

Allen's FY 2022 focus areas include, but are not limited to, continuing respectful work place annual refresher training, continuing efforts to integrate bio-gas² into Allen's CC operations, and assembling a site continuous improvement team to identify potential areas for improvement. Metrics for FY 2021 included, but were not limited to, total spend, trip events, CC equivalent availability factor,³ CT economic starting reliability, and environmental noncompliance.

At the end of FY 2021, Allen CT was under budget for operations and maintenance spend; however, Allen CC was over budget for operations and maintenance spend.⁴ Since FY 2019, staffing has remained steady at around 32 individuals. As of October 13, 2021, staffing included the manager-integrated CC & CT site (site manager), operations manager, maintenance manager, 5 CC lead operations technicians, 11 CC operations technicians, 2 CC operations technician trainees, 3 maintenance mechanics/machinists, 2 CC maintenance coordinators, 1 controls gas specialist, 3 CT plant technicians, 1 CT site foreman, and 1 business support representative.

¹ CT units ignite a mixture of air and fuel to create hot combustion gases that expand through turbine blades connected to a generator to produce electricity. CC units initially operate the same as CTs but also capture heat from the gas turbines, convert it to steam, and use it to produce power.

² Bio-gas comes from the decaying of organic materials in wastewater and can be used as a substitute for natural gas.

³ Equivalent availability factor reflects the percentage of time over a given period that a generating unit was available to generate power for TVA.

⁴ According to documentation provided by the site manager, Allen CC was over budget due to routine and forced-outage spending.

OBJECTIVE, SCOPE, AND METHODOLOGY

The objective of this evaluation was to identify factors that could impact Allen's organizational effectiveness. We assessed operations as of September 2021 and culture at the time of our interviews, which occurred during November 2021. To complete the evaluation, we:

- Reviewed the (1) PO FY 2021 through FY 2023 business plan, (2) Gas Operations' FY 2021 through FY 2023 business plan, (3) FY 2021 TVA Enterprise Risk Portfolio, and (4) documentation provided by the Allen business support representative to gain an understanding of initiatives and/or risks within Allen.
- Reviewed FY 2020 and FY 2021 plant scorecards to gain an understanding of Allen metrics.
- Reviewed TVA values and competencies (see Appendix A) for an understanding of cultural factors deemed important to TVA.
- Reviewed select TVA and PO Standard Programs and Processes to gain an understanding of processes.
- Examined FY 2019 through FY 2021 (1) financial information to gain an understanding of expenditures used in support of the work environment and (2) staffing data to gain an understanding of headcount changes.
- Conducted individual interviews with 30⁵ individuals and analyzed the results to identify themes that could affect organizational effectiveness.

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

⁵ One individual was no longer at Allen at the time interviews began and one individual did not respond to requests for an interview.

OBSERVATIONS

During the course of our evaluation, we identified positive behaviors that included relationships with team members and business units outside of Allen; however, we also identified behavioral concerns with two managers. In addition, we identified operational factors needing improvement related to (1) perceptions of ineffective work management, (2) fire alarm system repairs, and (3) site security and access concerns.

BEHAVIORAL FACTORS

According to the Society for Human Resource Management (SHRM),⁶ employee engagement relates to the level of an employee's connection and commitment to the organization. SHRM also specifies drivers of employee engagement, including commitment of leaders, trust in leadership, and positive relationships with supervisors. TVA has developed competencies intended to define common characteristics that set the tone for how work is to be performed in the organization. Defined behaviors are associated with the competencies to provide guidance as to how employees can demonstrate their commitment to TVA values. We identified positive behavioral factors including relationships with team members and business units outside Allen; however, we also identified behavioral concerns with two managers.

Positive Relationships with Team Members and Business Units Outside of Allen

TVA expects employees to earn the trust of others through open, honest, and respectful words and actions. Most individuals at Allen commented positively on interactions with others in their group, and most individuals indicated they trusted their coworkers to perform their jobs well. A few individuals commented positively on the experience or knowledge level of Allen personnel, while many others commented positively on teamwork, working well together, and/or having good relationships with each other. When asked about interactions with business units outside their organization, most individuals provided positive comments, describing business units as helpful, supportive, or providing useful expertise to Allen.

Improvements Needed in Some Managers' Interactions

TVA expects leaders to inspire trust and engagement by building a positive environment that motivates others to achieve and exceed organizational goals and team aspirations. We asked individuals at Allen about relationships or interactions with their first-line management, middle management, and upper management. While most individuals commented positively on their relationship or interactions with their first-line management, many had concerns with one first-line manager related to communication and/or accountability. We discussed the specifics of these concerns with responsible Gas Operations' management.

⁶ SHRM is a membership organization for Human Resource professionals.

When asked about the relationship with their middle manager, some individuals expressed concerns. Specifically, several individuals described their middle manager as exhibiting behaviors that are not in alignment with TVA's leadership competencies of inspiring trust and engagement, effective communication, and leveraging diversity. We discussed the specifics of these concerns with responsible Gas Operations' management.

All individuals who commented on their interactions or relationships with upper management were positive. Upper management was described as being personable and/or supportive of the site, as well as being friendly, open, or engaged. In addition, many individuals commented positively on communication from upper management, such as being open to feedback or questions, or providing communication updates through e-mails, videos, or open forums with employees. Finally, most individuals who commented indicated they trust their upper management.

OPERATIONAL FACTORS

We identified operational factors needing improvement related to (1) perceptions of ineffective work management, (2) fire alarm system repairs, and (3) site security and access concerns.

Perceptions of Ineffective Work Management

Several individuals described ineffective work management related to preventative maintenance (PM)⁷ and/or adequacy of work packages. Specifically, several individuals expressed their perceptions that PM at Allen was neglected, lacking, or ineffective. However, only one example was provided; a motor failure resulted from an ineffective PM. In addition, a few individuals indicated their belief that not all PMs have been identified and input into Maximo.⁸ According to the site manager, identifying PMs has been an ongoing process since the plant became operational in 2018. Further, the site manager provided documentation showing Allen is part of an ongoing Gas Operations' initiative focused on identifying the criticality of assets and associated maintenance.

Several individuals also described work packages as not (1) having the necessary level of detail and/or (2) containing needed information such as drawings, applicable procedures, or equipment manuals. In addition, several individuals described receiving a work order but not having the parts available to perform the work, which in some instances resulted in delayed or rescheduled work. For example, a few individuals described not having necessary parts or materials on-site to perform planned outage work. PO Standard Programs and Processes 06.008, *Work Package Development*, defines requirements for developing and processing a standard work package and outlines responsibilities associated with work package development. These responsibilities include (1) ensuring work

⁷ TVA defines PM as periodic servicing activities such as lubrication, filter changes, cleaning, and adjustments that are carried out at predetermined intervals and are intended to reduce the likelihood of equipment failure.

⁸ Maximo is TVA's Enterprise Asset Management system.

packages are complete and address job safety and (2) identifying materials needed to support work activities and ensuring materials are available to perform scheduled work.

Fire Alarm System Repairs

A few individuals described ongoing issues with the fire alarm system. Specifically, a couple of individuals described frequent alarms due to system malfunctions that have not been addressed. As a result, these individuals indicated each shift the system or component is reset only to have an alarm recur on the next shift. We were provided documentation showing concerns with the fire alarm system occurring as early as 2019. Although system issues have gone unaddressed for some time, according to the site manager, these issues did not impair the system from initiating, activating, or operating properly. The site manager provided documentation indicating that some actions to address alarms were taken in January 2022 and that more service calls need to be scheduled to address the remaining issues.

Site Security and Access Concerns

Several individuals expressed concerns with site security and/or plant access at Allen. Specifically, a few individuals expressed concerns with site security based on recent car break-ins in the contractor parking lot or gunshots being fired at vehicles. We confirmed with TVA Police that there were two incidents in November 2021 where vehicles were broken into. In addition, a few individuals expressed frustration because the retired coal plant⁹ has on-site security guards whereas Allen, an active generating site, does not. During our evaluation, a project initiation form to upgrade the contractor vehicle gate was submitted by the site manager to TVA Police in an effort to improve safety and accountability. The requested completion date for the project is June 2022.

In addition, several individuals in Operations expressed concerns about access control to the site. According to the site manager, at times when no office personnel are on-site, individuals without badged access must call the control room to obtain access through the gate. Several individuals in Operations indicated this was a distraction from operating the units and/or that they lacked knowledge as to who has been approved for access. Several individuals indicated controlling gate access is especially difficult during outages because of the volume of people requesting to be allowed on-site.

CONCLUSION

Allen plays a vital role in TVA's diverse and adaptable generation portfolio. While we did identify behavioral factors that had a positive impact on Allen related to positive relationships with team members and business units outside of Allen, we also identified behavioral concerns with two managers. In addition, we identified operational factors needing improvement related to (1) perceptions of ineffective work management, (2) needed fire alarm system repairs, and (3) site security

⁹ Allen Fossil Plant, which is being deconstructed, is located near Allen.

and access concerns. Management is addressing some of these concerns by implementing a Gas Operations' initiative to address work management, overseeing fire alarm system repairs, and submitting documentation to upgrade site security, which reduces the level of risk. Based on these factors, we rate Allen's behavioral risk as medium and their operational risk as low.

RECOMMENDATIONS

We recommend the Site Manager, Allen:

1. Work with the Senior Manager, Western Region, as applicable, to address concerns with behaviors of some managers.
2. Continue with plans to identify the criticality of assets and associated PM and communicate those plans to Allen personnel.
3. Address perceptions of ineffective work packages.
4. Complete actions related to the fire alarm system repairs.
5. Evaluate the need to add a security presence on-site and complete the security upgrade project.
6. Address concerns with site access.

TVA Management's Comments – Gas Operations' management agreed with the recommendations. In addition, they provided the following in response to recommendation no. 1, Gas Operations' is assessing leadership development opportunities for all employees to improve performance and engagement. See Appendix B for TVA management's complete response.

TVA Values	
Safety	We are uncompromising in our commitment to the safety and well-being of our teammates and the communities we serve.
Service	We are proud to be of service in the communities in which we live, work, and play.
Integrity	We are honest and straightforward, always doing the right thing with integrity.
Inclusion	We treat everyone with dignity and respect – emphasizing inclusion by welcoming each person's individuality so we can reach our full potential.

TVA Leadership Competencies

- Accountability and Driving for Results
- Continuous Improvement
- Leveraging Diversity
- Adaptability
- Effective Communication
- Leadership Courage
- Vision, Innovation, and Strategic Execution
- Business Acumen
- Building Organizational Talent
- Inspiring Trust and Engagement

April 11, 2022

David P. Wheeler, WT 2C-K

REQUEST FOR COMMENTS – DRAFT EVALUATION 2022-17335 – ORGANIZATIONAL
EFFECTIVENESS – ALLEN INTEGRATED SITE

Gas Operations would like to thank Jessica Monroe and Andi McCarter for their diligence and support to optimize the Gas Operations workforce by identifying opportunities for organizational effectiveness.

In response to the memorandum dated March 11, 2022, Gas Operations has reviewed your draft report and have the following comments and responses.

Recommendations

We recommend the Site Manager, Allen Integrated Site:

1. Work with Senior Manager, Western Region, as applicable, to address concerns with behaviors of some managers.

Response

Gas Operations agrees with the concerns raised and we are assessing leadership development opportunities for all employees to improve performance and engagement. Gas Operations is committed to a professional and respectful workplace.

2. Continue plans to identify the criticality of assets and associated Preventative Maintenance (PM) and communicate those plans to Allen personnel.

Response

Gas Operations agrees with this recommendation.

3. Address perceptions of ineffective work packages.

Response

Gas Operations agrees with this recommendation.

4. Complete actions related to the fire alarm system repairs.

Response

Gas Operations agrees with this recommendation.

David P. Wheeler, WT 2C-K
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5. Evaluate the need to add a security presence on-site and complete the security upgrade project.

Response

Gas Operations agrees with this recommendation.

6. Address concerns with site access.

Response

Gas Operations agrees with this recommendation.

Thank you for the time to allow us to review and provide feedback on the draft evaluation



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Plant Manager
Allen Integrated Site

MSC:TDL

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