



Memorandum from the Office of the Inspector General

January 21, 2020

Stacey L. Parrott

REQUEST FOR FINAL ACTION – EVALUATION 2019-15627-04 – ORGANIZATIONAL EFFECTIVENESS – HYDRO GENERATION, RACCOON MOUNTAIN

Attached is the subject final report for your review and final action. Your written comments, which addressed your management decision and actions planned or taken, have been included in the report. Please notify us when final action is complete. 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 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.

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

NKK:KDS

Attachment

cc (Attachment):

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OIG File No. 2019-15627-04



TVA RESTRICTED INFORMATION

Office of the Inspector General

Evaluation Report

To the General Manager,
Hydro Generation

ORGANIZATIONAL EFFECTIVENESS – HYDRO GENERATION, RACCOON MOUNTAIN

Evaluation Team
Noel K. Kawado
Justin B. Franklin

Evaluation 2019-15627-04
January 21, 2020

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TVA RESTRICTED INFORMATION

ABBREVIATIONS

FY	Fiscal Year
Hydro RM	Hydro Generation, Raccoon Mountain
PO	Power Operations
SPP	Standard Program and Process
TVA	Tennessee Valley Authority

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- A. TVA VALUES AND LEADERSHIP COMPETENCIES
- B. MEMORANDUM DATED JANUARY 15, 2020, FROM STACEY L. PARROTT TO DAVID P. WHEELER



Evaluation 2019-15627-04 – Organizational Effectiveness – Hydro Generation, Raccoon Mountain

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. To achieve and sustain organizational effectiveness, there should be alignment between strategy, team engagement, and operational performance. Specifically, values and behaviors that drive good performance should be embedded throughout the organization’s business processes and exemplified by the individuals that manage and work in the organization. The Tennessee Valley Authority’s (TVA) 2018 Risk Assessment Summary recognized that (1) workforce strategy and management risksⁱ and (2) workplace environment risksⁱⁱ could negatively affect the performance environment.

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 TVA. As requested by Hydro Generation management, we assessed Hydro Generation, Raccoon Mountain (Hydro RM), which is an organization under Power Operations (PO). The objective of this evaluation was to identify strengths and risks that could impact Hydro RM’s organizational effectiveness.

What the OIG Found

During the course of our evaluation, we identified strengths that positively affected the day-to-day activities of Hydro RM personnel. These strengths included (1) organizational alignment, (2) positive interactions within and outside of Hydro RM, (3) effective leadership, and (4) positive ethical culture. We also identified risks that could impact Hydro RM’s ability to meet its responsibilities in support of PO’s mission. These were comprised of risks related to (1) an employee’s behaviors that are inconsistent with TVA’s Values, (2) inadequate staffing, and (3) outage execution and management.

ⁱ Workforce strategy and management risks include failure to manage key leadership transitions ineffective talent management, and performance management shortfalls.

ⁱⁱ Workplace environment risks include lack of organizational adaptability, lack of inclusion and employee engagement, and inappropriate workplace incidents.



Evaluation 2019-15627-04 – Organizational Effectiveness – Hydro Generation, Raccoon Mountain

EXECUTIVE SUMMARY

Based on our observations and using TVA’s Business Operating Model, we assessed Hydro RM’s level of risk in the areas of alignment, engagement, and execution. We determined:

- Alignment risk is rated low based on alignment of employee goals with those of regional management as well as TVA’s Values and Competencies. Performance goals also aligned to Hydro Generation initiatives, which supported PO’s and TVA’s missions.
- Engagement risk is rated low. While behavioral concerns were expressed about one employee, most individuals expressed positive comments about their relationships with other employees, first-line management, and middle management.
- Execution risk is rated medium based on concerns related to inadequate staffing and outage execution and management.

	Low Risk	Medium Risk	High Risk
Alignment	X		
Engagement	X		
Execution		X	

What the OIG Recommends

We recommend the General Manager, Hydro Generation:

1. Address the employee’s behaviors that are not in alignment with TVA values.
2. Assess and address concerns related to staffing.
3. Work with the appropriate TVA organizations and Hydro RM employees to assess and address concerns related to the execution and management of outages.

TVA Management’s Comments

TVA management described actions planned to address our recommendations. See Appendix B for TVA management’s complete response.

Auditor’s Response

We agree with management’s planned actions.

BACKGROUND

Organizational effectiveness, as defined in this evaluation, is the ability of an organization to achieve its mission and goals. To achieve and sustain organizational effectiveness, there should be alignment between strategy, team engagement, and operational performance. Specifically, values and behaviors that drive good performance should be embedded throughout the organization's business processes and exemplified by the individuals that manage and work in the organization.

In recent years, the Tennessee Valley Authority (TVA) has faced internal and external economic pressures and implemented cost-cutting measures in an attempt to keep rates low and reliability high while continuing to fulfill its broader mission of environmental stewardship and economic development. TVA's 2018 Risk Assessment Summary recognized that (1) workforce strategy and management risks¹ and (2) workplace environment risks² could negatively affect the performance environment.

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 TVA. As requested by Hydro Generation management, we assessed Hydro Generation, Raccoon Mountain (Hydro RM), which is an organization under Power Operations (PO). The mission of PO is to provide low-cost, reliable coal, gas, and hydro generation while keeping employees safe and ensuring compliance with environmental regulations.

Hydro Generation currently operates 29 conventional hydroelectric dams and Hydro RM, which collectively includes 113 generating units, located throughout the Tennessee Valley. These units account for 5,182 megawatts of net dependable capacity.³ Of that total, Hydro RM generation accounts for approximately 31 percent of that capacity.

Hydro RM is a pumped-storage plant located south of Chattanooga along the Tennessee River and Nickajack Reservoir on a 3,000-acre reservation. This plant serves as an energy-storage facility to help the TVA power system operate efficiently and reliably. According to TVA, each night when power demand is low, four reversible turbines pump water from Nickajack Reservoir up 1,050 feet to a 538-acre mountaintop reservoir. When power is needed, water is released through the penstock where it impacts and rotates the turbines, shafts, and generator rotors located inside the powerhouse, thereby generating electricity. At full capacity, the mountaintop reservoir contains 20 hours of full-load generation.

¹ Workforce strategy and management risks include failure to manage key leadership transitions, ineffective talent management, and performance management shortfalls.

² Workplace environment risks include lack of organizational adaptability, lack of inclusion and employee engagement, and inappropriate workplace incidents.

³ Net dependable capacity is the amount of power a dam can produce on an average day, minus the power used by the dam itself.

The four generating units at Raccoon Mountain are capable of producing 1,653 megawatts of power.

Hydro RM is primarily comprised of Maintenance and Operations personnel. Both groups include Hydro Technician levels III and IV, who report to the respective Operations or Maintenance Manager. The Maintenance group also includes laborers. Operations is tasked with the safe and efficient operation of the plant's generating units including monitoring and inspecting plant equipment and reporting any abnormal operating condition as well as writing and issuing clearances. Maintenance is responsible for safely, effectively, and efficiently maintaining plant assets, while laborers are charged with general labor work including maintaining cleanliness and order of the facility. Hydro RM personnel responsible for supporting the organization include engineers and a business support representative who report to the Senior Manager.

Hydro RM, along with other Hydro Generation regions, tracks metrics related to people, operations, finance, and stewardship. Specifically, people-related metrics include number of injuries, number of human performance events, and number of observations performed. Metrics related to operations include equivalent forced outage rate,⁴ equivalent availability factor,⁵ and the number of unit trips. Finance metrics include capital, nonfuel operations and maintenance, and total spending, as well as changes in nonfuel inventory. Stewardship metrics include those related to environmental compliance and continuous improvement activities.

As of July 10, 2019, Hydro RM had 34 employees, including 1 senior manager, 1 hydro plant operations manager, 1 hydro plant maintenance manager, and 31 other employees.

OBJECTIVE, SCOPE, AND METHODOLOGY

At the request of Hydro Generation management, we assessed Hydro RM's organizational effectiveness. The objective of this evaluation was to identify strengths and risks that could impact Hydro RM's organizational effectiveness. We assessed operations as of October 2019 and culture at the time of our interviews, which occurred during August 2019. To complete the evaluation, we:

- Reviewed PO's and Hydro Generation's fiscal year (FY) 2019 through FY 2021 business plans and TVA's FY 2019 through FY 2021 Business Plan Summary to determine whether goals and initiatives aligned with those of PO and TVA.
- Reviewed TVA values and competencies (see Appendix A) for an understanding of cultural factors deemed important to TVA.

⁴ This is defined as the percentage of generation lost due to forced outages with respect to the total generation capability for a period that a unit is not planned to be offline. Forced outages are unplanned outages caused by equipment failures or problems.

⁵ Equivalent availability factor reflects the percentage of available capacity within a defined period.

- Reviewed select (1) TVA and PO Standard Programs and Processes (SPP) and other documentation to gain an understanding of processes and (2) laws and regulations to gain an understanding of the requirements of the organization.
- Examined financial information for FY 2018 and FY 2019, through June, to gain an understanding of the operations and maintenance expenditures that could affect the work environment.
- Conducted individual interviews with 33 employees,⁶ including management, and analyzed the results to identify themes related to strengths and risks that could affect organizational effectiveness.
- Analyzed FY 2018 performance documentation for personnel⁷ to identify alignment with respective management and organizational goals and/or initiatives.
- Obtained feedback from Performance Excellence, Environmental Operations, Law Enforcement, Supply Chain, and Human Resources personnel that support Hydro RM to identify strengths and risks that could affect organizational effectiveness.
- Assessed the overall effectiveness of Hydro RM in the following areas, as included in TVA's Business Operating Model:
 - Alignment – How well the organization coordinates the activities of its many components for the purpose of achieving its long-term objectives—this is grounded in an understanding of what the organization wants to achieve, and why.
 - Engagement – How the organization achieves the highest level of performance from its employees.
 - Execution – How well the organization achieves its objectives and mission.

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

⁶ One individual, at the time of our interviews, indicated having responsibilities outside of Hydro RM for more than a year; therefore, that individual was not interviewed.

⁷ We excluded performance management documentation for trades and labor personnel. According to TVA documentation, effective calendar year 2018, performance management documentation for trades and labor employees was discontinued.

OBSERVATIONS

During the course of our evaluation, we identified strengths that positively affected the day-to-day activities of Hydro RM personnel. However, we also identified risks that hinder Hydro RM's effectiveness and its continued ability to meet its responsibilities in support of the PO mission.

STRENGTHS

During the course of our interviews and data analyses, we identified strengths that positively affected the day-to-day activities of Hydro RM personnel. These strengths included (1) organizational alignment, (2) positive interactions within and outside of Hydro RM, (3) effective leadership, and (4) positive ethical culture.

Organizational Alignment

Our review of FY 2018 performance management documentation for management and employees revealed that performance goals were consistent with goals of the individual's regional management as well as TVA's Values and Competencies. Performance goals also aligned to Hydro Generation initiatives, which supported PO's and TVA's missions. Most individuals indicated they understood how their goals aligned with either the plant, hydro, PO, and/or TVA goals and/or mission.

Positive Interactions Within and Outside of Hydro RM

The majority of employees interviewed provided positive comments related to interactions with coworkers. In addition, most individuals indicated they trusted their coworkers to do their jobs well. Most individuals also indicated positive interactions with other departments within the organization. Some employees also indicated teamwork as a driver for positive morale within the organization.

Most individuals indicated that interactions with others outside of Hydro RM were positive. Several personnel indicated having good working relationships with individuals in other organizations, such as Performance Excellence (which includes Safety Consultants) and Environmental Operations.

Effective Leadership

For most individuals in Hydro RM, the Maintenance or Operations Plant Manager is their first-line leadership, and the Senior Manager serves as their middle management. The Senior Manager serves as first-line leadership for other individuals, while the Hydro Generation General Manager serves as their middle management. Most individuals in Hydro RM indicated having positive relationships with their first-line and middle management. Specifically, most employees provided positive comments pertaining to these two levels of leadership in the areas of communication, trust, and recognition. In addition, most employees indicated they felt comfortable about reporting concerns or sharing a differing opinion with their first-line and middle management.

Positive Ethical Culture

Employees and management are charged with conducting business according to the highest ethical standards and seeking to earn the trust of others through words and actions that are open, honest, and respectful. Ethical culture is defined in this evaluation as the “shared concept of right and wrong behavior in the workplace that reflects the true values of the organization and shapes the ethical decision making of its members.”⁸ The majority of employees interviewed indicated that the ethical culture in their department and/or organization was positive.

RISKS

During the course of our evaluation, we identified risks that could hinder Hydro RM’s effective execution and its continued ability to meet its responsibilities in support of the PO mission. These were comprised of risks related to (1) an employee’s behaviors that are inconsistent with TVA’s Values, (2) inadequate staffing, and (3) outage execution and management.

Employee Behaviors Inconsistent with TVA Values

TVA’s values (included in Appendix A) include safety, integrity, and accountability. Example behaviors associated with these values include sharing a professional and personal commitment to protect the safety of employees and contractors, conducting business to the highest ethical standards, seeking to earn the trust of others through works and actions that are open, honest, and respectful, and taking personal accountability for one’s actions. While most employees indicated having good relationships with their co-workers, first-line management and middle management, behavioral concerns were expressed about one employee. We provided specific details to management.

Perceptions of Inadequate Staffing

Several individuals indicated their belief that staffing should be increased. Some individuals indicated that current staffing levels were insufficient to complete the work, with a few individuals indicating the work orders are sometimes closed without addressing the concerns identified due to a lack of personnel. We reviewed staffing information for Hydro RM in People Lifecycle Unified System⁹ and noted that employee staffing, as of September 30, 2019, is currently at its highest since September 30, 2013.

Outage Execution and Management Concerns

During our interviews, several individuals expressed concerns related to the execution and management of outages based on a then-ongoing outage on Unit 4 and past¹⁰ outages at Hydro RM. Specifically, several individuals indicated their belief that outages and/or projects are not executed well. Particular concerns that

⁸ S. P. Robbins & T. A. Judge, *Organizational Behavior*, 18th edition, 2019.

⁹ People Lifecycle Unified System is TVA’s Human Capital Management system.

¹⁰ According to the General Manager, Hydro Generation, the prior outages that were mentioned by employees took place several years ago.

were discussed included (1) individuals brought in from other organizations to lead outages do not always have adequate knowledge to successfully manage/execute the outage, (2) poor quality of work by contractors working on outages, and (3) delays that result in extended outage durations.

At the time of our fieldwork, Hydro RM was undergoing an outage on Unit 4. According to the “*Raccoon Mountain Unit 4 Runner Replacement Project - Construction Management Plan*,” the outage entailed full unit disassembly and reassembly. The target duration was 190 days, to begin on February 13, 2019, and complete on August 21, 2019. However, according to information provided by TVA, as of September 17, 2019, this outage was projected to be 960 hours behind schedule with a revised completion date of September 30, 2019 (a subsequent report showed the outage was completed on October 7, 2019). In addition, based on TVA project data, the outage was approximately \$1.68 million over its \$25.3 million budget, as of October 14, 2019. These delays have affected the TVA employees at RM, who assist with execution of outage activities.

While the majority of individuals provided positive feedback about morale at Hydro RM, some individuals indicated morale was being negatively impacted by the delays or problems with the current outage on Unit 4. Based on Hydro Generation’s FY 2019 through FY 2021 business plans, Hydro RM is expected to have eight outages during FY 2020 and FY 2021, totaling approximately 242 days. Morale at Hydro RM could decrease further if concerns related to outage management are not addressed.

CONCLUSION

Because Hydro RM is responsible for nearly a third of Hydro Generation’s capacity, it is a necessary component in assisting PO with achievement of its mission of low-cost, reliable generation. While interviews with employees revealed the existence of organizational alignment, positive interactions within and outside of Hydro RM, first-line and middle management strengths, and a positive ethical culture, engagement-related improvements related to a specific individual, and execution-related improvements around staffing and outage execution/management could be made to aid in achievement of PO’s mission.

Based on our observations and using TVA’s Business Operating Model, we assessed Hydro RMs level of risk in the areas of alignment, engagement, and execution. We determined:

- Alignment risk is rated low based on alignment of employee goals with those of regional management as well as TVA’s Values and Competencies. Performance goals also aligned to Hydro Generation initiatives, which supported PO’s and TVA’s missions.
- Engagement risk is rated low. While behavioral concerns were expressed about one employee, most individuals expressed positive comments about

- their relationships with other employees, first-line management, and middle management.
- Execution risk is rated medium based on concerns related to inadequate staffing and outage execution and management.

RECOMMENDATIONS

We recommend the General Manager, Hydro Generation:

1. Address the employee's behaviors that are not in alignment with TVA values.

TVA Management's Comments – Hydro leadership will assign specific training to the employee on communication and trust building with teams to develop and improve the employee's leadership skills.

Auditor's Response – We agree with management's planned actions.

2. Assess and address concerns related to staffing.

TVA Management's Comments – Hydro senior leadership is working with PO's leadership on a work management initiative to include an evaluation of work load and associated resource levels. Ultimately, a resource management strategy will be developed to meet the business needs of the organization while aligning with business goals and targets.

Auditor's Response – We agree with management's planned actions.

3. Work with the appropriate TVA organizations and Hydro RM employees to assess and address concerns related to the execution and management of outages.

TVA Management's Comments – PO Improvement Strategy for Outage and Project Execution will help improve role clarity and better align processes and resources through the use of standard performance measures across the fleet.

Auditor's Response – We agree with management's planned actions.

TVA Values	
Safety	We share a professional and personal commitment to protect the safety of our employees, our contractors, our customers, and those in the communities that we serve.
Service	We are privileged to be able to make life better for the people of the Valley by creating value for our customers, employees, and other stakeholders. We do this by being a good steward of the resources that have been entrusted to us and a good neighbor in the communities in which we operate.
Integrity	We conduct our business according to the highest ethical standards and seek to earn the trust of others through words and actions that are open, honest, and respectful.
Accountability	We take personal responsibility for our actions, our decisions, and the effectiveness of our results, which must be achieved in alignment with our company values.
Collaboration	We are committed to fostering teamwork, developing effective partnerships, and valuing diversity as we work together to achieve results.

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

January 15, 2020

David P. Wheeler, WT 2C-K

REQUEST FOR COMMENTS – DRAFT EVALUATION 2019-15627-04 – ORGANIZATIONAL
EFFECTIVENESS – HYDRO GENERATION, RACCOON MOUNTAIN

The following is in response to your memorandum dated December 18, 2019. An Organizational Effectiveness review of the Hydro Operating regions and support organizations was conducted by the Inspector General's office. The Hydro Organization utilizes its Power-To-Win plan to measure performance in specific focus areas. Where performance does not meet targets or expectations, measurable action plans are developed to close gaps. These action plans are reviewed monthly, as well as at the fiscal year end, and actions are adjusted as needed to achieve desired results. These plans were also reviewed during the organizational effectiveness reviews.

Recommendations:

We recommend the Senior Manager, Regional Hydro RM:

1. Address the employee's behaviors that are not in alignment with TVA values.

Response Action

The Hydro Leadership was notified by the investigating OIG inspector that the claims regarding the behaviors of the employee in question were determined to be unsubstantiated. The Hydro Leadership does recognize our role as leaders we are expected to model the TVA values and will continue to align our teams around these standards. The Hydro Leadership will work with this individual on their communication and building trust within their team to improve alignment. We will assign specific training on communications and building trust with teams in order to develop and improve the leadership skills of the individual.

2. Address concerns related to staffing.

Response Action

The Hydro senior leadership team is working with Power Operations leadership on a work management initiative that will include an evaluation of work load and associated resource levels. The goal is to consistently align work management practices across Power Operations following an assessment of our work management processes. Once that's complete, a resource management strategy will be developed that meets the business needs of the organization while aligning with business goals and targets.

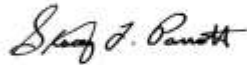
David P. Wheeler
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3. Work with the appropriate TVA organizations and Hydro RM employees to assess and address concerns related to the execution and management of outages.

Response Action

Power Operations Improvement Strategy for Outage and Project Execution will improve role clarity and better align processes and resources to utilize standard performance measures across the fleet. Hydro Operations supports this strategy and has developed team leads specific to our technology to align the Hydro Power-To-Win plan to monitor and assess progress accordingly. The Power Operations Improvement Strategy is measured and progress tracked and reviewed at the COO level on a periodic basis.

Thank you for allowing us to provide these comments. If you need additional information, please let us know.



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General Manager
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