Memorandum from the Office of the Inspector General

October 14, 2016

Robert M. Deacy, Sr., LP 5D-C

REQUEST FOR FINAL ACTION – EVALUATION 2016-15384 – GENERATION
CONSTRUCTION PROJECTS' ORGANIZATIONAL EFFECTIVENESS

Attached is the subject final report for your review and final action. Your written comments which address 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.

Information contained in this report may be subject to public disclosure. Please advise us of any sensitive information that you recommend be withheld.

If you have any questions or wish to discuss our findings, please contact Amy R. Rush, Evaluations Manager, at (865) 633-7361 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)
ET 3C-K

ARR:BSC
Attachment
cc (Attachment):

TVA Board of Directors	William D. Johnson, WT 7B-K
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GENERATION CONSTRUCTION PROJECTS' ORGANIZATIONAL EFFECTIVENESS

Evaluation Team
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ABBREVIATIONS

EPMO	Enterprise Project Management Office
FY	Fiscal Year
GC	Generation Construction, Projects, and Services
O&M	Operations and Maintenance
SPP	Standard Programs and Processes
SVP	Senior Vice President
TVA	Tennessee Valley Authority
VP	Vice President

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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, operational performance, and team engagement. 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) 2015 3-year Strategic Risk Profile recognized that ongoing organizational refinement and optimization might negatively affect the performance environment. Therefore, employee engagement is critical.

Due to the importance of alignment between strategy, operational performance, and team engagement, the Office of the Inspector General is conducting organizational effectiveness evaluations of business units across TVA. In recent years, the global economic crisis caused companies to decrease spending in order to survive. According to the Project Management Institute, some companies focused on project management in an effort to control costs and reduce risk as a method of survival.[i] TVA, not immune to the effects of the crisis, 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. One such cost-cutting measure implemented in fiscal year (FY) 2012 was to focus on project management activities in an effort to generate cost savings.

Four business units within TVA's Generation Construction, Projects, and Services (GC) strategic business unit are responsible for managing projects for TVA. These organizations and their associated responsibilities are as follows:

- Civil Projects and Coal Combustion Project Management – Responsible for performing both construction management and direct construction for a wide variety of needs, such as clearing land, drainage work, and support of transmission and substation projects.

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[i] The Project Management Institute is a nonprofit professional membership association for the project management profession. The organization publishes globally recognized project management standards and provides project certification programs.

- Clean Air Programs – Responsible for adding emissions controls to TVA facilities for air quality improvement.

- Generation Projects and Service Shops – Responsible for performing projects, such as those related to outages, for the coal, gas, and hydro fleet.

- Major Projects – Responsible for all large, non-nuclear projects, such as construction of new generating facilities and environmental control projects for the existing coal fleet.

As of February 17, 2016, GC projects organizations contained 140 employees, including management, and 2,238 contractor personnel. As of that date, the GC management structure included one senior vice president, three vice presidents, two general managers, one director, and one principal project manager position. One of the general manager positions was vacant but later filled at the time of this evaluation. According to TVA's June 2016 project performance metric report, GC personnel was managing 226 projects exceeding $250,000.

What the OIG Found

According to GC, its primary responsibility is project management related to the performance of construction and operational services and the implementation of construction projects for all TVA organizations, with the exception of Nuclear. To assess the achievement of that responsibility, GC has performance goals related to operations and maintenance (O&M) spending,[ii] capital and regulatory spending,[iii] project critical milestones,[iv] and the recordable injury rate.[v] GC met these performance goals with the exception of its recordable injury rate in FY2014. GC met all performance goals in FY2015, and GC is on track to meet all FY2016 performance goals as of May 2016. We identified strengths related to (1) organizational alignment, (2) collaboration within GC departments, (3) management support of employees, and (4) employee engagement. We also identified inherent project management risks that, coupled with relationship issues

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[ii] O&M spend includes monies spent for routine O&M, project O&M, and other O&M.
[iii] Capital and regulatory spend includes monies for base capital projects, strategic projects, regulatory projects, and other projects.
[iv] Project critical milestones refers to the percentage of critical milestones completed on or ahead of schedule.
[v] The recordable injury rate measures the rate of recordable injuries per 200,000 actual employee hours worked as defined by TVA's safety program. This measure includes the number and types of work-related injuries reported by TVA employees, staff augmented contractors, and partner alliance contractors.

between GC personnel and customer and support organizations,[vi] could increase the risk that GC will not be able to effectively meet its mission in the future. Specifically, both GC personnel and customer and support organizations mentioned lack of recognition of how each organization affects the other, lack of knowledge of TVA Standard Programs and Processes, lack of collaboration and communication, and conflicting priorities as issues that affect their relationships.

Based on our findings and using TVA's Business Operating Model, we assessed GC project organizations' level of risk in the areas of alignment, execution, and engagement. As shown in Table 1 on the following page, we determined alignment risk to be low because of the cascading and aligned goals of management and personnel within GC project organizations. Furthermore, the majority of personnel within the project organizations had similar views of strengths and/or elements of success, which agreed with GC goals. We assessed execution of the mission as medium risk because of the relationship issues between GC project personnel and the customers and/or support organizations. In our opinion, the implementation of project tools for improved project management and reporting, as well as increased communication with support organizations and customers, will decrease execution risk. Finally, we rated engagement as low risk. Our interviews disclosed employees enjoy working in GC and had little staffing concerns despite the low number of employees in the organization. Furthermore, empowerment of employees to perform their job duties, opportunities for participation in Leadership Forums, and training opportunities for employees to mature their skill sets increase employee engagement.

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

Table 1

What the OIG Recommends

We recommend the Senior Vice President, GC, working with GC Vice Presidents collaborate with customer and support organizations to address concerns that negatively affect relationships. In order to focus on what is in the best interest of TVA, consider educational opportunities

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vi   Customer organizations are organizations for which GC performs project management activities, whereas support organizations are organizations that support GC project management efforts. Support organizations include Supply Chain and Environmental Permitting and Compliance.

designed to assist with understanding the position and priorities of the opposing organization while acknowledging and resolving potential dilemmas.

TVA Management's Comments

In response to our draft report, TVA management described planned actions to address the recommendation. These actions include seeking opportunities to develop a common understanding of project objectives and training in specific areas. 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. To achieve and sustain organizational effectiveness, there should be alignment between strategy, operational performance, and team engagement. 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) 2015 3-year Strategic Risk Profile recognized that ongoing organizational refinement and optimization might negatively affect the performance environment. Therefore, employee engagement is critical.

Due to the importance of alignment between strategy, operational performance, and team engagement, the Office of the Inspector General is conducting organizational effectiveness evaluations of business units across TVA. In recent years, a global economic crisis caused companies to decrease spending in order to survive. According to the Project Management Institute,[1] some companies, in response to the economic crisis, focused on project management in an effort to control costs and reduce risk. TVA, not immune to the effects of the crisis, 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. One such measure implemented in fiscal year (FY) 2012 was to focus on project management activities in an effort to generate cost savings.

Although project management occurs in various TVA organizations, TVA's primary project management organization is the Generation Construction, Projects, and Services (GC) strategic business unit. According to GC, its primary responsibility is project management related to the performance of construction and operational services and the implementation of construction projects for all TVA organizations, with the exception of Nuclear. Additionally, GC has an Enterprise Project Management Office (EPMO) that is responsible for the development and deployment of project management processes, systems, tools, and training, as well as project evaluation. The EPMO is in the process of developing an integrated suite of tools designed to enable TVA project management to increase productivity and to become more proactive, rather than reactive, in managing TVA projects. We have issued a separate organizational effectiveness evaluation report for the EPMO.[2]

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[1]   The Project Management Institute is a nonprofit professional membership association for the project management profession. The organization publishes globally recognized project management standards and provides project certification programs.

[2]   Evaluation Report 2016-15384-01, Enterprise Project Management Office's Organizational Effectiveness, September 20, 2016.

In addition to the EPMO, four business units within GC share the responsibilities of project management. These include:

- Civil Projects and Coal Combustion Project Management – Responsible for performing both construction management and direct construction for a wide variety of needs, such as clearing land, drainage work, and support of transmission and substation projects.

- Clean Air Programs – Responsible for adding emissions control equipment to TVA facilities for air quality improvement.

- Generation Projects and Service Shops – Responsible for performing projects, such as those related to outages, for the coal, gas, and hydro fleet.

- Major Projects – Responsible for all large, non-nuclear projects, such as construction of new generating facilities and environmental control projects for the existing coal fleet.

According to TVA's Project Management Standard Programs and Processes (SPP), project manager expectations include exhibition of leadership characteristics such as dealing with issues in a direct manner, acting ethically and legally, and practicing open and honest communication. Project managers have many responsibilities, including organizing project teams, developing project documentation, keeping management abreast of project status, and controlling quality, scope, cost, and schedule. There is also an expectation for project managers to follow multiple TVA policies and procedures, including those related to project management, safety, environmental, and procurement activities.

GC personnel manage projects under two different project management organizational structures. The majority of projects are managed under a structure similar to a "projectized organization"[3] where the primary focus of the organization is project implementation, and functional departments, such as Supply Chain and Environmental Permitting and Compliance, are responsible for providing support to the project team. GC is primarily self-reliant for project completion because the organization retains control of the budget for these projects. GC also manages projects, such as power operations modifications and dam safety construction, for the coal, gas, and hydro fleet. These projects are managed under a structure similar to a matrix structure where GC is responsible for managing Power Operations dollars for these projects rather than having direct control of the budget. The total dollars managed by GC projects as well as GC total spend is reflected in Table 1 on the following page.

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[3] Erik W. Larson and Clifford F. Gray, *Project Management: The Managerial Process*, sixth edition, McGraw-Hill Education, New York, 2014.

GC Dollars Managed for FY2015 and FY2016		
	FY2015	**FY2016**[1]
GC Total Spend (in millions)	1,074.9	1,514
GC Managed Spend for Other Organizations	298 M	390 M
[1] These numbers include FY2016 planned GC total spend and actual dollars managed through July 18, 2016. GC total spend was obtained from the FY2017 through FY2019 business plan, and managed dollars was obtained from TVA's Portfolio and Capital Allocation organization.		

Table 1

Project Process

GC projects are managed through four different phases: initiation, design, implementation, and closure. During the initiation phase, project managers prepare project documents, such as the project charter[4] and the project management plan,[5] and organize the project team. Project managers must also acquire appropriate approvals from respective levels of management before proceeding to the next project phase. For example, during the project initiation phase, projects with a total cost of $2 million or less need the approval of a department officer, such as a vice president (VP). Whereas, projects with a total cost exceeding $10 million require the approval of a VP, senior vice president (SVP), Chief Financial Officer, and Chief Executive Officer, as well as review by the Project Review Board.[6] Projects greater than $50 million also require the approval of the TVA Board of Directors and review by Enterprise Risk Management.

The design phase consists of coordinating and optimizing the project design, as well as developing the implementation management plan. Development of the implementation plan includes activities such as developing a work breakdown structure[7] that organizes work into manageable tasks, creating a safety plan, considering environmental aspects and obtaining permitting, and defining the critical path[8] of the project. Project managers must also obtain necessary reviews and approvals before the project can progress to the implementation phase. Project managers are expected to monitor project quality, cost, scope, schedule, and customer expectations throughout the life of the project, including during the implementation phase. At the end of this phase, the project manager obtains acceptance from the asset owner, and the project is approved to move to the closure phase where project managers ensure that purchase orders are closed, resources have been released from the project, and lessons learned have been documented.

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[4]　The project charter is a planning document that includes the project description, project goals and objectives, scope statement, responsibility matrix, risk factors, and key milestones.

[5]　The project management plan is a single, formal document that guides the execution and control of the project. The plan includes various plans for project components, such as schedule management, risk management, and change management.

[6]　The Project Review Board is responsible for providing oversight for TVA projects and serving as a control mechanism for project authorization approvals.

[7]　Work breakdown structure is the hierarchical structure of the work to be executed by the project team in the accomplishment of project objectives. The work breakdown structure organizes and defines the total scope of the project.

[8]　The critical path is defined as the sequence of project activities with the longest overall duration that determines the shortest time to complete the project.

Throughout the project lifecycle, project managers are expected to develop and refine the project schedule and cost estimate with the active phase having a higher level of detail than the successive phase(s). For example, in the initial phase of the project, the project team includes a schedule and cost estimate for project completion based on the project scope. In the project design phase, the schedule and cost estimate would be refined based on the work breakdown structure and represents a more accurate estimate of the time and cost necessary to complete the project. The level of detail to be included in the project schedule is based on the size and complexity of the project; however, all projects are to include standard TVA major milestones. These consist of (1) preliminary engineering start and completion dates, (2) detailed engineering and long lead material start and completion dates, (3) implementation start and completion dates, (4) work order and project in-service dates, and (5) Risk and Readiness Review[9] meeting dates for progression to the design and implementation phases.

Cost estimates for each project phase are to be supported by documentation that will allow an independent reviewer to duplicate the estimate. According to expectations included in the project management guidelines, the cost estimate for the implementation phase is to be well defined as the project team has completed the planning phase of the project. Along with the project cost estimates, project managers must also develop contingency amounts to mitigate cost and/or schedule risks. During the project initiation phase, this amount could be plus/minus 30 percent of the project cost depending on the complexity of the project. As the project progresses and estimations become more accurate, the contingency amounts might be lessened. For example, during the initiation of the project (Phase 1), the expected accuracy of the contingency amount for Phase 2 would be plus/minus 20 percent while the expected accuracy for Phase 3 would be plus/minus 30 percent because adequate planning has not yet occurred for those phases. As the project progresses to the next phase, the expected accuracy levels increase. Table 2 provides guidance for contingency development for projects less than $10 million.

TVA Guidance in Development of Project Contingency		
Project Phase	**Type**	**Expected Accuracy Level of Total Project**
Initiation (Phase 1)	Conceptual	+/-30%
Design (Phase 2)	Preliminary	+/-20%
Implementation (Phase 3)	Definitive	+/-10%

Table 2

Projects exceeding $10 million will have cost estimates with contingency amounts based on project risks that are documented in a project risk register. Project managers are to account for contingency funds separately from the project cost. Contingency funds are to be managed by project managers and

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9   Risk and Readiness Reviews are assessments used to provide comprehensive insight on project readiness for advancement to the next project phase.

tracked by project managers and/or project control specialists who are required to complete a project change request when using project contingency funds.

If there are significant changes to the project scope, cost, or schedule, then baseline changes are required to be approved. Project managers are to update project schedule baselines and obtain approval for changes to cost estimates at each approval phase. Approval for schedule changes can also be obtained through a change control process; however, minor adjustments to activities deemed as noncritical may be made without a formal change request. GC's EPMO tracks schedule and cost metrics for each project.

GC Metrics

According to the GC FY2016 through FY2018 business plan, GC's mission is to "execute TVA's strategic imperatives through our culture of innovation in the construction, management, and safe delivery of our products."[10] GC's FY2016 through FY2018 business plan set forth its key metrics, which includes:

- Operations and Maintenance (O&M) Spend – Monies spent for routine O&M, project O&M, and other O&M.

- Capital and Regulatory Spend – Monies spent for base capital projects, strategic projects, regulatory projects, and other projects.

- Project Critical Milestones (Percent Complete) – Percentage of critical milestones completed on or ahead of schedule.

- Recordable Injury Rate – Measures the rate of recordable injuries per 200,000 actual employee hours worked as defined by TVA's safety program. This measure includes the number and types of work-related injuries reported by TVA employees, staff augmented contractors, and partner alliance contractors.

As of February 17, 2016, GC projects organizations contained 140 employees, including management, and 2,238 contractor personnel in the projects organizations. As of that date, the GC management structure included one SVP, three VPs, two general managers, one director, and one principal project manager position. One of the general manager positions was vacant but later filled at the time of this evaluation. According to TVA's May 2016 project performance metric report, 226 projects exceeding $250,000 were being managed by GC personnel.

OBJECTIVE, SCOPE, AND METHODOLOGY

The objective of this evaluation was to identify strengths and risks that could impact GC project organizations' effectiveness. We assessed operations of GC project organizations from October 2014 to June 2016 and culture as of the date

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[10] TVA's strategic imperatives are maintain low rates (rates), live within TVA's means and be financially responsible (debt), meet reliability expectations (reliability), and responsibly manage the river system and natural resources (stewardship).

of our interviews occurring from May 16 through July 7, 2016. To complete the evaluation, we:

- Reviewed GC's FY2016 through FY2018 business plan to gain an understanding of goals.

- Reviewed TVA values and competencies (see Appendix A) for understanding of cultural factors deemed important to TVA.

- Interviewed GC's SVP and direct reports from the Civil Projects and CCP Management, Clean Air Programs, Generation Projects and Shop Services, and Major Projects groups, as well as 25 other designated supervisory/management-level employees to obtain their perceptions related to strengths and risks that could affect organizational effectiveness.

- Conducted interviews with a nonstatistical sample of 45 employees and analyzed the results to identify themes related to strengths and risks that could affect organizational effectiveness.

- Surveyed and/or conducted interviews with a nonstatistical sample of approximately 100 individuals[11] from other TVA organizations that work closely with GC project groups and analyzed results to identify strengths and risks from a customer or support service[12] standpoint.

- Nonstatistically selected performance management documentation for management and employees in GC projects organizations and analyzed the documentation for alignment with department and organizational goals, where applicable.

- Reviewed select TVA SPPs and guidelines to gain an understanding of processes and controls.

- Reviewed results of TVA's 2015 Employee Engagement Survey to gain additional understanding of the GC work environment.

- Assessed the overall effectiveness of GC project groups 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.
  - Execution – How well the organization achieves its objectives and mission.
  - Engagement – How the organization achieves the highest level of performance from its employees.

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[11] Number is an approximation because some organizations chose to submit information collectively rather than individually.

[12] Customer organizations are organizations for which GC performs project management activities, whereas support organizations are organizations that support GC project management efforts. Support organizations would include Supply Chain and Environmental Permitting & Compliance.

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

OBSERVATIONS

We determined that GC met performance goals for FY2014 and FY2015 with the exception of its recordable injury rate in FY2014. GC is on track, as of May 2016, to meet all FY2016 performance goals. We identified strengths related to: (1) organizational alignment, (2) collaboration within GC departments, (3) management support of employees, and (4) employee engagement. We also identified inherent project management risks that, coupled with relationship issues between GC personnel and customer and support organizations, could increase the risk that GC will not be able to effectively meet its mission in the future. Specifically, both GC personnel and customer and support organizations mentioned lack of recognition of how each organization affects the other, lack of knowledge of TVA SPPs, lack of collaboration and communication, and conflicting priorities as issues that affect their relationships.

STRENGTHS

During the course of our interviews and data analyses, we identified strengths that positively affected the day-to-day activities of GC project organizations' employees and performance. These strengths included: (1) organizational alignment, (2) collaboration within GC departments, (3) management support of employees, and (4) employee engagement.

Organizational Alignment
Our review of performance management documentation for a selection of individuals within GC project organizations revealed that individuals' performance goals were consistent with overarching GC goals. Performance management goals were also generally consistent with the job descriptions of GC project personnel. Furthermore, the majority of GC projects personnel interviewed answered consistently when discussing organizational success factors within GC and/or strengths within the organization, which included project execution.

Collaboration
The majority of GC personnel interviewed stated there was teamwork within their respective GC department. Several employees also cited collaboration as a behavioral strength for success within GC project organizations. Individuals discussed the joint project team[13] as a method for collaborating with team members as well as individuals within other organizations.

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[13] According to TVA's project management SPP, the joint project team is a group of employees, contractors, and customers (where appropriate) representing affected and supporting organizations involved in a modification, including its planning, engineering, construction, testing, and return to operability.

GC Management Viewed Positively

The majority of personnel we interviewed cited a positive culture within GC, and several individuals attributed this to GC leadership. In particular, these employees stated GC management supplied the tools necessary to perform their job duties by providing training, communicating well, and understanding their work. They also praised management for frequently visiting project sites and communicating with employees at all levels. Most employees indicated management was receptive to employee feedback and commended management for extending trust and empowering them to do their jobs.

Employee Engagement

Some personnel informed us GC is a lean organization; therefore, project managers are responsible for managing multiple projects in different project phases. Despite this, few employees mentioned staffing concerns but rather most employees expressed their joy at being in the organization, and some indicated that GC is the best organization they have ever worked in. To further employee engagement, GC management periodically holds Leadership Forums to discuss activities occurring within GC and TVA. We observed one forum where GC personnel had the opportunity to engage in dialogue with TVA's Chief Operating Officer. Individuals within the forum took the opportunity to ask questions and provide feedback on TVA decisions, which exemplified employee engagement in our opinion. These forums typically provide a training session where someone from the Bell Leadership Institute[14] teaches leadership skills to individuals in attendance. GC management also provides opportunities for individuals to attend leadership training outside of these forums.

RISKS

Project managers, in the course of their job duties, have a responsibility to manage risks associated with cost, schedule, scope, and quality, while also addressing customer expectations. As stated previously, TVA's Project Management SPP describes expectations of project management as leaders who act ethically and legally and who practice open and honest communication. Leadership characteristics necessary for building relationships with project teams and other organizations might include setting and communicating priorities, focusing on solutions to problems rather than placing blame, cooperating with other organizations, leading by example, and conducting oneself in an ethical manner.

To determine the perceptions and level of satisfaction in GC interactions, we interviewed GC personnel involved in joint project teams, including project managers, construction managers, and engineers. We also surveyed and conducted interviews of individuals outside of GC who potentially have a supporting role on joint project teams or who are GC customers. As stated previously, interviews with GC personnel indicated high levels of engagement

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[14] The Bell Leadership Institute is a consulting organization whose mission is to assist individuals with the development of personal effectiveness and leadership skills.

and collaboration efforts within the GC project teams. While most employees perceived no issues in dealing with others outside of GC, some employees stated there are sometimes challenges with other organizations. These stem from issues such as waiting on information necessary for the project to progress from other TVA organizations, lack of knowledge related to specific requirements due to changes in SPPs, and lack of communication with other organizations. In addition, employees mentioned the potential for conflicting priorities with other organizations when project managers make decisions based on achievement of project goals while personnel in other organizations make decisions based on achievement of their respective goals.

Although survey respondents outside of GC rated their experience with GC personnel as being slightly above average and the projects and services provided by GC as average,[15] respondents also discussed frustrations and concerns in dealing with GC personnel and/or processes. Specific comments from other organizations included the potential for improvement in (1) the recognition of how GC work affects other organizations; (2) understanding of requirements in SPPs by GC personnel; (3) thinking beyond the project schedule and realizing other things, such as compliance, are important; and (4) increased collaboration outside of the GC team. Some individuals also mentioned the existence of conflicting priorities that could increase distrust between GC and other organizations.

These relationship issues might be the result of an inherent risk within the project management process. This risk relates to dilemmas faced by project personnel when gray areas exist in choosing between what is right or wrong. According to academic research, 81 percent of project managers surveyed about issues faced by project management reported encountering these types of dilemmas in their work.[16] Within GC, personnel provided a few specific examples related to conflicting priorities where they were faced with making decisions that fit within this category.

These individuals, empowered by their management, sometimes have to make immediate decisions that could conflict with policies and procedures. For example, project managers might have to decide between immediately addressing an emergent issue that involves the use of contractors versus following policies and procedures that require the project manager to obtain approvals prior to the use of contractors. From the project management perspective, immediately addressing the issue could mitigate the risk of extended project schedules and increased costs to TVA; however, that decision could cause the organization to be out of compliance with TVA policies, procedures, and controls designed to mitigate risk. On the other hand, obtaining approvals prior to addressing the emergent issue, while keeping the organization in compliance, could negatively affect achievement of project milestones, a GC

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[15]   Not every person that responded provided a numerical rating, but all respondents provided comments.

[16]   Erik W. Larson and Clifford F. Gray, *Project Management: The Managerial Process*, sixth edition, McGraw-Hill Education, New York, 2014.

project goal, thereby increasing project costs and TVA expenses. From the perspective of the organization tasked with keeping individuals in compliance, the right decision would be to obtain prior approvals because this control mitigates the risk of potential cost exposure. While the focus of both organizations is on controlling costs for TVA, this could create a dilemma for project managers in doing what they believe is right. Depending on the choice made by the project manager, these dilemmas could result in negative perceptions of the project organization and/or might negatively affect project execution.

As previously stated, GC personnel manage projects under both a projectized and a matrix structure. Inherent risks related to both types of structures could also be a cause behind the comments pertaining to relationship issues. According to academic research,[17] advantages to project management within a projectized structure include more timely completion of projects and sharing of similar goals; however, there is a relationship risk associated with this structure. Specifically, conflict might exist between the project organization and supporting organizations within TVA because of differing priorities. Because GC is self-reliant for project completion and project managers are empowered to carry out their responsibilities, there is a propensity for an "us versus them" perception to develop between GC and the supporting organizations.

Also, as previously stated, in a matrix-structured organization, the project manager is responsible for managing dollars for other organizations rather than having direct control of the budget. Within this circumstance, project managers might feel less empowered because the project team is reliant upon another organization for release of funds and/or input into the project. According to academic research,[18] projects managed within this structure might have a stronger project focus since there is a dedicated project manager overseeing the project; however, risks, including unhealthy conflict and increased stress, might exist because of the differing priorities of the project manager and the asset owning organization. Furthermore, a matrix structure might also cause frustrations because of the increase in the time it takes to reach an agreement on an issue or to obtain funding necessary to complete a project. Addressing these issues could strengthen relationships between GC project management and other organizations and increase organizational effectiveness.

<u>CONCLUSION</u>

A primary responsibility of project management is to manage project risks associated with cost, scope, schedule, and quality. In addition to managing project attributes, project management also has a responsibility to manage relationships with team members, support organizations, and customers. As stated previously, these relationships might be negatively affected by inherent risks within the project management process caused by organizational structure

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[17] Erik W. Larson and Clifford F. Gray, *Project Management: The Managerial Process*, sixth edition, McGraw-Hill Education, New York, 2014.

[18] Ibid.

and possible dilemmas encountered by project management personnel. Therefore, communication within and outside of the team is important.

While project management personnel indicated collaboration within their respective departments and empowerment by leadership were organizational strengths, there was some indication of frustrations with processes outside of GC. Conversely, individuals outside of GC also indicated similar frustrations with GC processes and/or personnel. Because project management is focused on the cost and timeliness of completing quality projects, frustrations might increase when a supporting organization or customer does not provide information timely or when there is little participation in the projects process because of conflicting priorities. Furthermore, customer and/or supporting organizations might become frustrated if they are not allowed enough time to review information prior to providing input into project decisions or when they feel as if their opinions are not considered. While these frustrations can decrease the effectiveness of GC in project execution and negatively affect the achievement of the TVA mission, the commonalities between the concerns of GC personnel and other organizations indicate there is agreement on the issues that threaten relationships as well as organizational effectiveness. Increased communication outside of GC including the acknowledgment and resolution of project management dilemmas, understanding the position of the other organization, and a shared focus on what is in the best interest of TVA can decrease frustrations and stress levels of GC project management, customers, and support organizations and increase the effectiveness of GC in meeting its mission.

Based on TVA's Business Operating Model, we evaluated the risk of three critical areas that could impact the effectiveness of GC project organizations: alignment, execution, and engagement. Overall, based on our work, we found the GC project organizations to be effective, in light of the following:

- Alignment risk is low because of the cascading and aligned goals of management and personnel within GC project organizations. Furthermore, the majority of personnel within the project organizations had similar views of strengths and/or elements of success, which agreed with GC goals.

- Execution risk is medium because of the relationship issue between GC and the customer and support organizations. While GC met its project critical milestones goals for FY2014 and FY2015 and is on track to meet those goals in FY2016, these conflicts, if not resolved, could negatively affect project execution. In our opinion, increased communication with support organizations and customers, as well as the implementation of project tools for improved project management and reporting by EPMO, will decrease execution risk.

- Engagement risk is low because interviews disclosed that employees expressed joy at being in GC and had little staffing concerns despite the low number of employees in the organization. Furthermore, empowerment of employees to perform their job duties, opportunities for participation in

Leadership Forums, and training opportunities for employees to mature their skill sets increase employee engagement.

RECOMMENDATION

We recommend the SVP, GC, working with GC VPs collaborate with customer and support organizations to address concerns that negatively affect relationships. In order to focus on what is in the best interest of TVA, consider educational opportunities designed to assist with understanding the position and priorities of the opposing organization while acknowledging and resolving potential dilemmas.

TVA MANAGEMENT'S COMMENTS

In response to our draft report, TVA management described planned actions to address the recommendation. These actions include seeking opportunities to develop a common understanding of project objectives and training in specific areas including environmental mastery, engagement, and leadership. See Appendix B for TVA management's complete response.

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

TVA

Tennessee Valley Authority, 1101 Market Street, Chattanooga, Tennessee 37402

October 7, 2016

Mr. David P. Wheeler
Office of Inspector General
400 West Summit Hill Drive
Knoxville, Tennessee 37902

Dear Mr. Wheeler:

RESPONSE TO DRAFT EVALUATION 2016-15384 – GENERATION CONSTRUCTION,
PROJECTS' OGRANIZATIONAL EFFECTIVENESS

GCP&S Leadership acknowledges that there are inherent risks associated with customer and
support organization relationships. Our organizational model in which we collaborate with both
project-centric and matrix-structured groups can uncover differences in priorities. Leadership
believes that all individuals involved in the delivery of projects at TVA are operating with the
agency's best interest in mind, but acknowledges that individual frustration may come into play
when an individual feels that others are impeding their ability to do their job, are not following
their functional procedure, or do not acknowledge their other priorities.

In addition to seeking opportunities to develop a common understanding of the project
objectives and team member requirements, we have built some specific training into our
GCP&S Leadership Meetings that should help mitigate these potential risks. This training will
be conducted by Bell Leadership and be delivered in 4-modules throughout FY17 and is
focused on environmental mastery, engagement, cross-organizational engagement and
leadership.

Sincerely,

Robert M. Deacy, Sr.
Senior Vice President
Generation Construction, Projects & Services

JLD:LEY