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Duke Energy's Supply Chain Support of the Ash Basin  
Work Activity

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# Presentation Objectives

- This presentation will focus on how Duke Energy's Supply Chain has evolved in supporting the ash basin work activity since 2014. Items that will be covered include:
  - Brief history of ash management
  - Brief overview of the current regulatory requirements
  - The evolution of the work activity
  - The initial Supply Chain Support
  - Creation of a new Sourcing Group – the Ash Basin Sourcing Group
  - The initial work activity for the Ash Basin Sourcing Group
  - Creation of a Staffing Plan
  - Creation of a Mission, Vision, Achievement Statement, and Team Attributes
  - Creation of a Standard Process
  - Review how Vendors/Contractors have been engaged as well as Contracting Approaches
  - Overview of the Ash Basin Sourcing Group's Accomplishments

## Brief History of Ash Management

- Burning coal to generate electricity creates two types of ash: ~80% is fly ash and ~20% is bottom ash.
- For early coal plants, fly ash was part of air emissions.
- In the 1950-1960s, fly ash began to be collected with plant equipment.
- The industry began mixing the fly ash with water in ash basins to manage it more effectively and prevent dusting.

# 2014 North Carolina Coal Ash Management Act

- The North Carolina Coal Ash Management Act (CAMA) went into effect in October, 2014. The act:
  - Finalized plans to dewater and close basins at Asheville, Dan River, Riverbend, & Sutton.
  - Defined three tiers of basins that prioritize the closure of all NC ash basins.
  - Provided comprehensive compliance boundary language, including corrective actions to be taken.
  - Created a Coal Ash Commission within the Department of Public Safety that will oversee ash basin closures.
  - The act also required Duke Energy to launch a bidding event no later than December 31, 2014 to conduct a market analysis for the cement industry and other industries that might beneficially use coal combustion residuals and study the feasibility of technology to convert existing and new generated coal combustion residuals to commercial grade coal combustion products suitable for use in the concrete industry and examine all innovative technologies that might be applied to diminish, recycle or reuse or mitigate the impact of existing and newly generated coal combustion residuals.

## North Carolina House Bill 630 (July, 2016)

- The North Carolina General Assembly worked to make improvements and updates to the Coal Ash Management Act (CAMA), passed in 2014, which established an aggressive schedule and process to close all ash basins in North Carolina. As it was being implemented, it became clear that several updates and improvements were needed.
- HB 630 eliminates the Coal Ash Management Commission and transfers ash basin closures to the North Carolina Department of Environmental Quality (NCDEQ).
- In addition, it requires:
  - Permanent, alternative water supplies to neighbors within a half-mile of coal plants by October 2018;
  - The ongoing supply of drinking water to plant neighbors until a permanent water supply is completed;
  - Completion of dam project work already underway; and
  - Installation and operation of three large-scale ash reprocessing units for recycling more ash in concrete.

# EPA's Coal Combustion Residual (CCR) Rule

- The 2014 Coal Combustion Residual Rule was signed by the EPA Administrator on December 19, 2014.
- Though the complex, 745-page rule deems coal ash a nonhazardous waste, classifying it in the same category as household trash, the rule could still cost the utility industry billions to comply.
- As summarized by the EPA, the rule stipulates:
  - The closure of basins that fail to meet engineering and structural standards, as well as those that no longer receive ash
  - Regular inspections of the structural integrity of surface coal ash impoundments
  - Restrictions on the location of new ash basins
  - Groundwater protection standards, including monitoring, cleanup of contamination and closing of unlined basins
  - Controls to reduce windblown coal ash dust
  - Lining new basins and closing basins with protective materials
- The rule establishes recordkeeping and reporting requirements, including the online posting of annual groundwater monitoring and corrective action reports, CCR fugitive dust control plans, and closure completion notifications.
- The rule became effective in April of 2015, six months after publication in the Federal Register. However, the final rule establishes timeframes for certain technical criteria based on the amount of time determined to be necessary to implement the requirements.

# Evolution of Work Activity

- Following the Dan River Coal Spill in February, 2014, the initial work activity focused on assessing the current condition of all of our ash ponds.
- In addition, Feasibility Studies, Repair Work, Material Procurement, Video Inspections, etc., were completed.
- Section 3(b) of the 2014 Coal Ash Management Act requires Duke Energy to close in accordance with Section 3(c) the coal combustion residuals (CCR) surface impoundments located at the Asheville, Dan River, Riverbend, and Sutton as soon as practicable but no later than August 1, 2019.
- Duke Energy also signed a consent agreement with the State of South Carolina to excavate the inactive ash basin at the WS Lee Station.
- Subsequent general work activities have included but not limited to Engineering, Closure Planning, Groundwater Assessment, Dewatering, Dredging, Landfill Construction & Operation, Slope Stabilization, Spillway Construction, Dry Bottom Ash Conversion, Water Redirection, Wastewater, Wetland Delineation, & Vegetation Management.

## Initial Supply Chain Support of the Ash Basin Work Activity

- Supply Chain assumed responsibility for ash sourcing from the Fuels Group in Q2 of 2014.
  - The Strategic Projects Supply Chain was assigned the task of supporting the ash basin work activity.
    - One full time resource was initially assigned to support this work.
    - In addition, the site buyers were asked to support the work as needed at their respective locations.
- However, the work volume only intensified.
- Soon, it was clear that a dedicated group was needed.



## Creation of the Ash Basin Sourcing Group

- The Ash Basin Sourcing Group was created on August 16, 2014.
  - The group was launched with three internal resources:
    - Manager
    - Lead Sourcing Specialist
    - Sourcing Specialist
- The Site Buyers were still being utilized as needed.

# Initial Work of the Ash Basin Sourcing Group

- Assessment of the Market was conducted:
  - The Request for Information (RFI) was sent to 345 companies in Q1 of 2015.
  - The largest RFI ever undertaken by Duke Energy.
  - The universe was a combination of vendors who had been invited to part ash related events, members of the American Coal Ash Association, members of the Utility Solid Waste Activities Group, and input from Duke Energy's internal Business Units.
  - 243 of the vendors accessed the event within Power Advocate.
  - 132 completed the RFI Questionnaire.
  - Following the RFI, a searchable Excel based database of the respondents was created. The companies are searchable by their core competencies, secondary capabilities, and region of operation. The database has been growing ever since.
  - Introductory Meeting with potential suppliers & contractors are convened regularly.
  - Strong desire to utilize local & diverse suppliers.
  - As needs arise, the Ash Basin Sourcing Group is accessing the database to see who is available within the market place to complete the work activity. Duke Energy's standard bid, evaluate, and award sourcing process is then followed.
- Vetting
  - All contractors performing on-site work activity must have an Approved Rating within Duke Energy's Contractor Safety Rating Program.
  - To help monitor capacity, the Number and Dollar Volume of Purchase Orders being issued to Contractors are tracked.
- However, the work volume continued to intensify.
- Additional resources were needed.

# Creation of a Staffing Plan for the Ash Basin Sourcing Group

- A comprehensive staffing plan was initiated in Q1 of 2015.
- Since the depth or breadth of the ash basin work activity was not clearly known, the desire was to build a sourcing organization that would be scalable to support the newly created internal Coal Combustion Products (CCP) Group and CCP Environmental Group that were being created as well.
- In addition, the structure needed to be support Duke Energy's Road Ahead – Customer Focus, Employee Engagement, Operational Excellence, and Grow the Business.
  - Today, the CCP Group has over 300 internal members; CCP Environmental Group has over 50 members.
- The desired results were as follows:
  - Higher level of engagement with the internal business partner
  - Higher level of business partner satisfaction
  - Greater visibility into forthcoming work
  - Paradigm shift from a tactical approach to a more strategic approach
  - Reduction in Duke Energy's Total Cost of Ownership as well as minimize our commercial risk.
- Required coordination with the new Business Units as well as the other support groups that were being created as well, including Health & Safety, Project Controls, Quality, Configuration Management, and Work Management.

## Developed a Mission & Vision Statement for the Ash Basin Sourcing Group

- The mission of the Ash Basin Sourcing Group is to help the CCP Group achieve its business objectives for the lowest possible cost as well as minimizing our commercial risk without sacrificing safety, quality, of schedule while ensuring that the work is performed in accordance with Duke Energy's Purchasing Controls Policy.
- The vision - by working in a collaborative manner with integrity and transparency, we will meet the needs of our internal business partners as well as earn the trust of our external stakeholders by implementing creative, cost effective solutions that will not only protect, but will sustain our communities in which we serve well into the future.

# The Ash Basin Sourcing Group Achievement Statement

So that our vision becomes a reality, we must:

1. Engage with our business partners and other stakeholders on a daily basis to ensure that we have a complete and thorough understanding of their needs.
2. Engage with other internal resources such as legal, insurance, credit risk, tax, supplier diversity, etc., as necessary to help formulate the optimal commercial solution to any problem.
3. Develop and maintain relationships with qualified contractors, suppliers, and vendors to ensure competition exists within the market place.
4. Develop comprehensive bid packages that clearly communicate the scope of work, our requirements, and our desired outcome to ensure a high probability that project success will ultimately be achieved.
5. Develop objective bid evaluation criteria that will support identification of the lowest evaluated solution through qualitative analysis rather than subjective means.
6. Be nimble enough to employ different contracting strategies that will help support and promote the desired outcome.
7. Embrace a sense of urgency.
8. Strive for continuous improvement.
9. Endeavor to be fair and reasonable.
10. Ensure at the end of the day that we are prepared for the next.

# Developed the Ash Basin Sourcing Group Team Member Attributes

## Sourcing Manager

- Lead the group and provide guidance and support to team members when assistance is needed
- Conduct himself or herself in a professional manner, never compromise their integrity, uphold the highest ethical standards, & to treat others with respect and courtesy.
- Maintain a high level of engagement with the Leadership of the CCP organizations
- Ensure that all corporate policies are met
- Maintain an open line of communication with team members
- Provide honest feedback to team members regarding their performance
- Identify and provide applicable training opportunities
- Monitor the Personal Development Plan of team members
- Elevate any issues and/or gaps to Supply Chain in a timely manner for assistance in resolution

## Individual Team Members

- Possess a strong desire to learn and to ask questions as well as to provide constructive, insightful, and actionable feedback.
- Continually challenge themselves and to strive for continuous improvement.
- Conduct themselves in a professional manner, never compromise their integrity, uphold the highest ethical standards, and to treat others with respect and courtesy.
- Maintain the information entrusted to them by internal business partners and/or external contractors as confidential.
- Create and maintain a formal Development Plan that is to be revisited and updated on a regular basis.

# Developed the Ash Basin Sourcing Group's Team Member Expectations

Team members are expected to:

- Adhere to Duke Energy's Purchasing Controls Policy at all times and to provide guidance to others within Duke Energy as needed.
- Serve as Commercial Subject Matter Experts to the CCP organizations and deliver value on a daily basis.
- Actively participate in meetings/teleconferences with the CCP organization to help them meet their needs and promote the most fortuitous outcome.
- Maintain an open line of communication with the other Supply Chain organizations keeping them apprised of current or forthcoming bidding events associated with their locations, outstanding issues, and/or accomplishments. Issues are to be dealt with timely and through the appropriate management. Ideally this will take place at the lowest possible level of the organization.
- Draw on other internal resources (legal, insurance, credit risk management, etc.) as necessary to help formulate the best possible solution to a problem

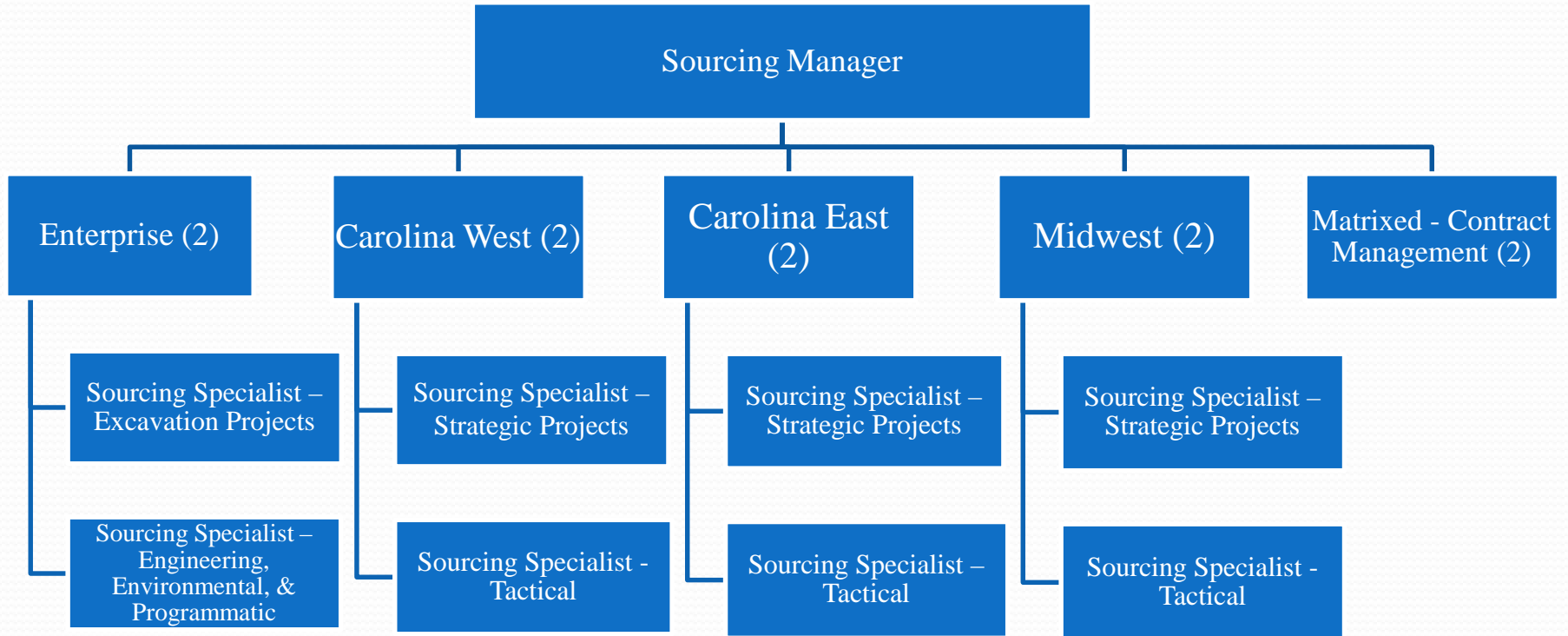


# Ash Basin Group Sourcing Group On Boarding Process

- In an effort to place all of the new team members in the best position possible to be successful, a New Employer Binder was developed. It consisted of:
  - Welcome Letter
  - Training Itinerary for the First Week
  - Supply Chain Organizational Chart
  - CCP & CCP Environmental Organizational Charts
  - Overview of the Supply Chain Support of the Ash Basin Work Activity
  - Ash Basin Sourcing Group - Mission, Vision, Achievement Statement, and Team Attributes
  - Duke Energy's Purchasing Controls Policy
  - List of Internal Stakeholders
  - List of Time Reporting Codes
  - 2015 Supply Chain Goals
- In addition, the Binder contained the instructions for each new employee on how to obtain their Corporate Card, VPN Access, Personal Mobile Device, Voice Conferencing System, Access to all Network Systems, Printers, SharePoint Sites, etc.



# Ash Basin Sourcing Group – Full Staffed in Q3 of 2015



## Ash Basin Group Sourcing Group – Roles & Responsibilities

- Contract Managers – Serve as the Commercial Subject Matter Expert for their assigned contracts.
- Strategic Sourcing – Focusing on Bidding Events and the resulting contract formation.
- Tactical Sourcing – Focusing on monitoring the Maximo Start Center and processing approved requisitions as well as supporting the Site System Owners within the CCP Operations & Maintenance Group.

# Ash Basin Group Sourcing Group – Standardize Process

- In an effort to ensure a consistent approach to the work, a Standardized Process was developed with input from the entire team, including:
  - RFP Process Guide
  - RFP Templates
  - Single Source Justification Guide
  - Work Flow Information Sheet
  - Purchase Order & Master Contract Templates
  - Purchase Order Tracker Report
  - Project Change Request Process
  - Strategic Project List
  - Value of Sourcing Calculation
  - How to Create a Purchase Order
  - How to Close a Purchase Order
  - Bi-Weekly One-on-One Templates that are based upon our annual Supply Chain Goals
- Enhancements to these documents are made on a regular basis based upon feedback from the team.

# Ash Basin Group Sourcing Group – Vendor/Contractor Engagement – Contracting Approaches

- In regards to Vendor/Contractor Engagement as well as Contracting Approaches, the Ash Basin Sourcing Group utilized the following:
  - Strategic Alliance Agreement have been established with key service providers, including engineering firms, drillers, & environmental firms. These agreements were derived from a competitive bidding event.
  - Master Contracts have been established with a number of different service providers as well. It provides the framework for how business shall be conducted between the parties. These are ideal for repetitive, low dollar transactions.
  - Frequent participant at Supplier Diversity Forums.
  - Created a New Vendor Questionnaire; subsequently fed into our database for potential new suppliers/contractors.
  - Duke Energy’s Construction Packages have included the requirement that the successful bidders will procure their needed material & consumables through the Integrated Supply Program at the Duke Energy pricing structure.
  - Traditional contracting strategies have been employed, including Firm Lump Sum, Time & Material as well as Cost Plus.
  - Alternative contracting strategies are now being explored.

# Making a Paradigm Shift from a Tactical Approach to a Strategic Approach

- Since its inception, the Ash Basin Sourcing Group has worked diligently to develop a high level of engagement with the CCP & CCP Environmental Groups.
- Through this effort, the Ash Basin Sourcing Group has been able to educate the CCP & CCP Environmental Groups of the importance of approach work from a strategic approach and less from a tactical approach. In doing so, ten large portfolios of common work across the majority of ash basins have recently been identified.
- A Demand Planning Effort was recently kicked-off in February. The teams initially have been tasked with gathering data (in-scope, out of scope, spend, schedule, etc.) and to formulate the recommended sourcing strategy.
- First Management Update was in March. Final recommendations will be made in June.
- Once we have alignment, the teams will then be responsible for executing the strategy.
- The goal is to not only reduce our Total Cost of Ownership but to minimize our Commercial Risk as well.

# Ash Management Sourcing Group Accomplishments

The following accomplishments of the Ash Basin Sourcing Group are based upon Duke Energy's four pillars of the Road Ahead with External Customers being replaced with internal business partners in this particular case:

## Customers (Internal Business Partners):

- Continue to foster a high level of engagement with the CCP Group.
- Viewed by CCP Leadership as being vital to their success.
- Provided training on Duke Energy's Purchasing Controls Policy to all CCP & CCP Environmental Group Team Members.

## Employees:

- Based upon their performance, the team members are highly engaged & enabled.
- Five employees have been promoted to next Sourcing hierarchy role since October 1, 2016.

## Operational Excellence:

- Continue to make enhancements to our internal procedures in an effort to improve our operating efficiency.
- Continue to maintain strong relationships with the other support groups, including EHS, Work Management, Project Controls, Quality, Configuration Management, and Supplier Diversity.

## Growth:

- Continue to engage local and diverse suppliers in support of the ash basin work activity.
- Continue to lower our total cost of ownership by launching bidding events and making process improvements.
- Documented Cost Savings
- The team members continue to grow & gain confidence.

# Questions

