

# Tri-State Generation and Transmission



Craig Station and IBEW Local 111  
Pursuing Safety Excellence  
Providing Worker Protection



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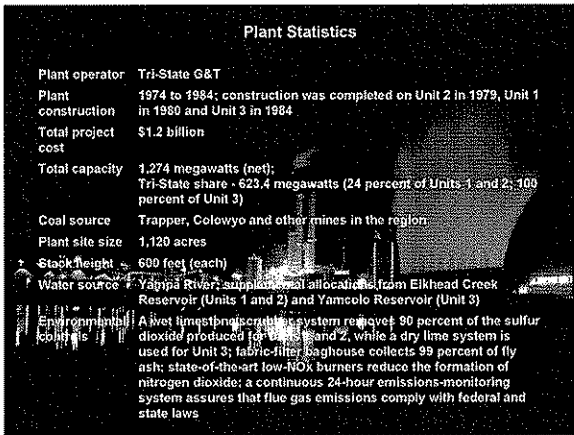
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## Plant Statistics

Plant operator Tri-State G&T  
Plant construction 1974 to 1984; construction was completed on Unit 2 in 1979, Unit 1 in 1980 and Unit 3 in 1984  
Total project cost \$1.2 billion  
Total capacity 1,274 megawatts (net);  
Tri-State share - 623.4 megawatts (24 percent of Units 1 and 2; 100 percent of Unit 3)  
Coal source Trapper, Colowyo and other mines in the region  
Plant site size 1,120 acres  
Stack height 600 feet (each)  
Water source Yampai River; supplemental allocations from Elkhead Creek Reservoir (Units 1 and 2) and Yamcolo Reservoir (Unit 3)  
Environmental controls A wet limestone scrubber system removes 90 percent of the sulfur dioxide produced for Units 1 and 2, while a dry lime system is used for Unit 3; fabric-filter baghouse collects 99 percent of fly ash; state-of-the-art low-NOx burners reduce the formation of nitrogen dioxide; a continuous 24-hour emissions-monitoring system assures that flue gas emissions comply with federal and state laws



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## Craig Station Safety Improvement Program



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Developing safety improvement through collaboration, continuous improvement, and employee driven safety initiatives.

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- Collaboration Between:**
- International Brotherhood of Electrical Workers Local #111
  - Tri-State G&T Management
  - OSHA VPP

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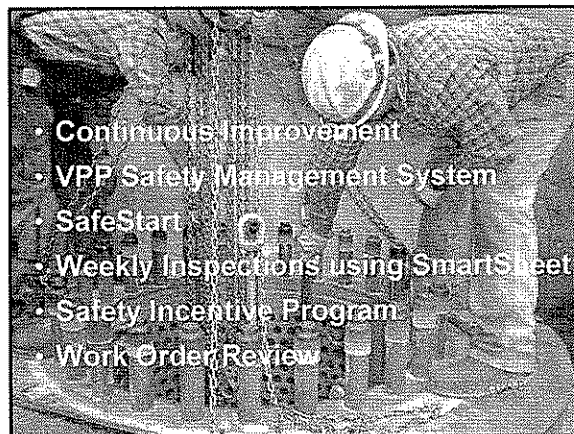
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- Continuous Improvement
- VPP Safety Management System
- SafeStart
- Weekly Inspections using SmartSheet
- Safety Incentive Program
- Work Order Review

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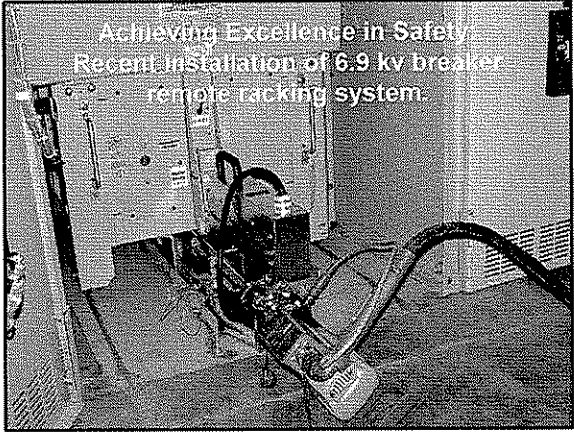
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**Achieving Excellence in Safety**  
Recent installation of 6.9 kv breaker  
remote racking system.

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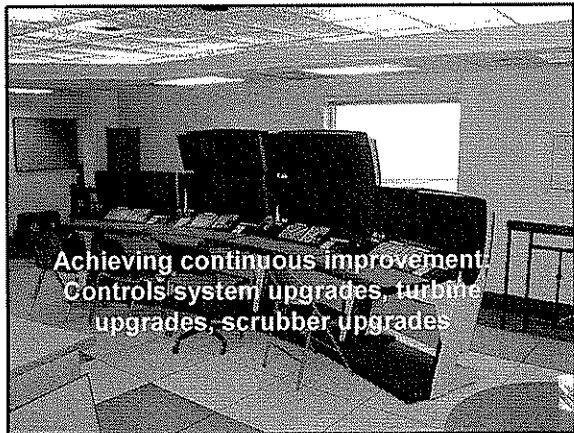
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**Achieving continuous improvement**  
Controls system upgrades, turbine  
upgrades, scrubber upgrades

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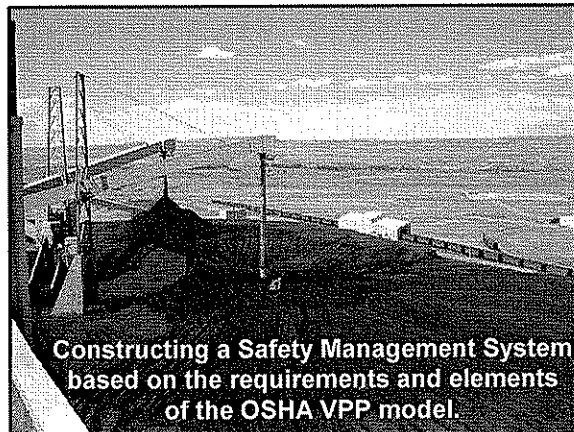
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**Constructing a Safety Management System**  
based on the requirements and elements  
of the OSHA VPP model.

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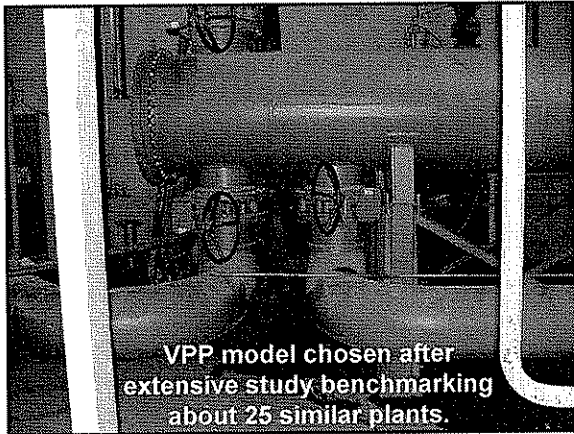
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VPP model chosen after extensive study benchmarking about 25 similar plants.

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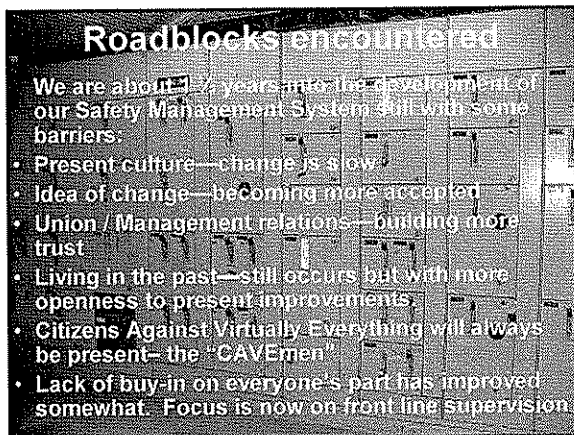
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### Roadblocks encountered

We are about 1 1/2 years into the development of our Safety Management System still with some barriers.

- Present culture—change is slow
- Idea of change—becoming more accepted
- Union / Management relations—building more trust
- Living in the past—still occurs but with more openness to present improvements
- Citizens Against Virtually Everything will always be present—the "CAVEmen"
- Lack of buy-in on everyone's part has improved somewhat. Focus is now on front line supervision

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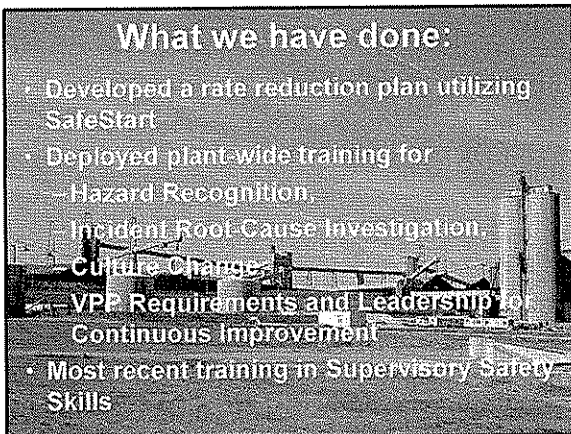
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### What we have done:

- Developed a rate reduction plan utilizing SafeStart
- Deployed plant-wide training for
  - Hazard Recognition,
  - Incident Root-Cause Investigation,
  - Culture Change,
  - VPP Requirements and Leadership for Continuous Improvement
- Most recent training in Supervisory Safety Skills

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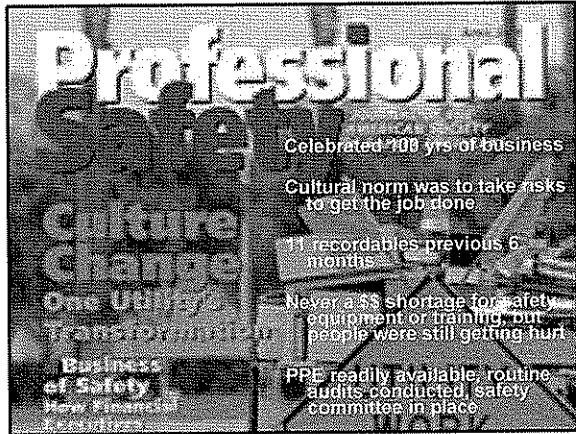
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**Transforming Safety Culture**  
*Grassroots-led/management-supported change at a major utility*  
 By Steven L. Simon and Peter A. Catano

- Traditionally: Safety was a management responsibility.
- "There weren't enough safety-minded managers or safety professionals to go around."
- Employees tended to do things they had been doing for about 30 years.
- Each group of employees were doing things according to their own group's unspoken code.

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**Craig Station Similarities**

- 50 years of business
- Cultural norm was to take risks to get the job done
- At least 50% above the national average incident rate
- Never a \$\$ shortage for safety equipment or training, but people were still getting hurt
- PPE readily available. Routine audits conducted, safety committee in place

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### Craig Station Similarities

- Traditional thought was that safety was a management responsibility
- "there weren't enough safety-minded managers or safety professionals to go around"
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### What we needed to do:

- Deploy a comprehensive SMS.
- Build a strong safety culture.
- Attain VPP Star while overcoming:
  - Lack of knowledge of what safety excellence and VPP would require
  - Lack of trust between management and union employees
  - Low faith in the current safety processes
  - Missing safety processes and weak safety leadership

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### What we did: (we got help)

We initiated a four-step safety improvement process at Craig Station:

1. Initial Benchmarking
2. Implementation of the Safety Management System Master Control Plan
3. Leadership Development through KPI's
4. Re-benchmarking & VPP readiness evaluation

*excellence*

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**safePath software** **The Tools We Use:**



**SafePath VPP Benchmarking Tool** – used by the site leadership team consisting of management, union, and Safety staff for conducting the initial gap analysis & final benchmarking.

**SafePath VPP Master Control Plan** – used by the site leadership team to map current site processes and to create missing processes. The Master Control Plan provides a centralized web portal to all safety & VPP policies and procedures. All site employees may access procedures, policies, dashboards, meeting minutes and tracking systems.

**SafePath Performance Dashboard** – used by the site manager to hold the site accountable and to align his management team on the key attributes for success. Publishing the dashboards allows all site employees to see the leadership example that management is providing.

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**safePath** **SafePath VPP Benchmarking Tool**

- Initial gap analysis (Jan. 08)
- VPP Annual Review (Dec. 08)
  
- This is the instrument we use for the required VPP annual review

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**safePath** **SafePath VPP Master Control Plan**




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## SafePath Performance Dashboards

- [Initial Gap Analysis](#)
- [2008 VPP Annual Review](#)
- [2008 Action Plan Dashboard](#)
- [2009 Action Plan Dashboard](#)
- [Leading Indicators Dashboard](#)
- [Site Rates Dashboard](#)

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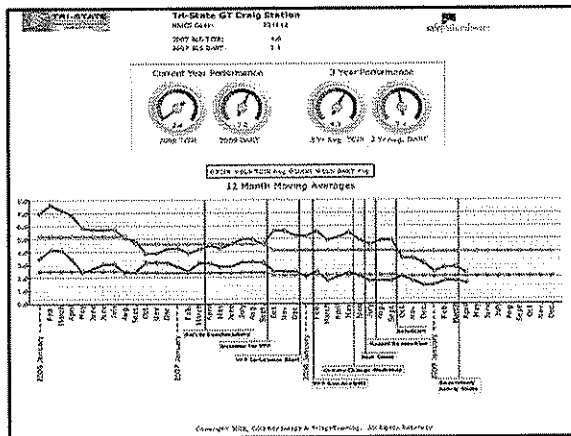
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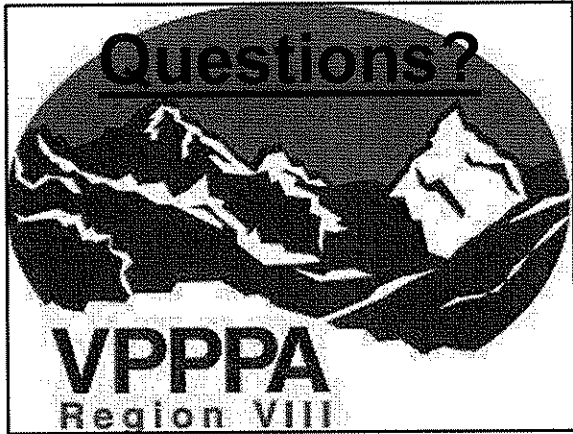
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