Development Partners

Troutdale Energy Center

July 2012

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Troutdale Energy Center (TEC)

Project

- **TEC: state-of-the-art, highly efficient and clean natural gas fueled power plants that meet PGE needs as detailed in the 2009 Integrated Resource Plan**
  - 200 MW Simple Cycle Facility for renewable integration and peak load
  - 450 MW Combined Cycle Facility for base load energy needs

- **The Port of Portland's Troutdale Reynolds Industrial Park is an very good location for a new power plant**
  - The brownfield project site would reuse and revitalize an industrially zoned former aluminum plant site
  - Flexible project design allows TEC to develop where others might not be able due to site specific challenges
  - Significant existing infrastructure reduces the extent of new construction and thereby the overall cost of the facility to PGE customers
  - Existing infrastructure includes the Williams gas pipeline, transmission infrastructure from PGE, BPA and PaciCorp, and reclaimed waste water from the City of Troutdale

- **Siting a power plant in the Portland metro area brings increases in power efficiency, reliability, and quality**
  - Existing residents and businesses benefit from an improved electric system
  - East Multnomah County will be more appealing to new electricity intensive businesses such as server farms and data centers

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Troutdale Reynolds Industrial Park and TTD

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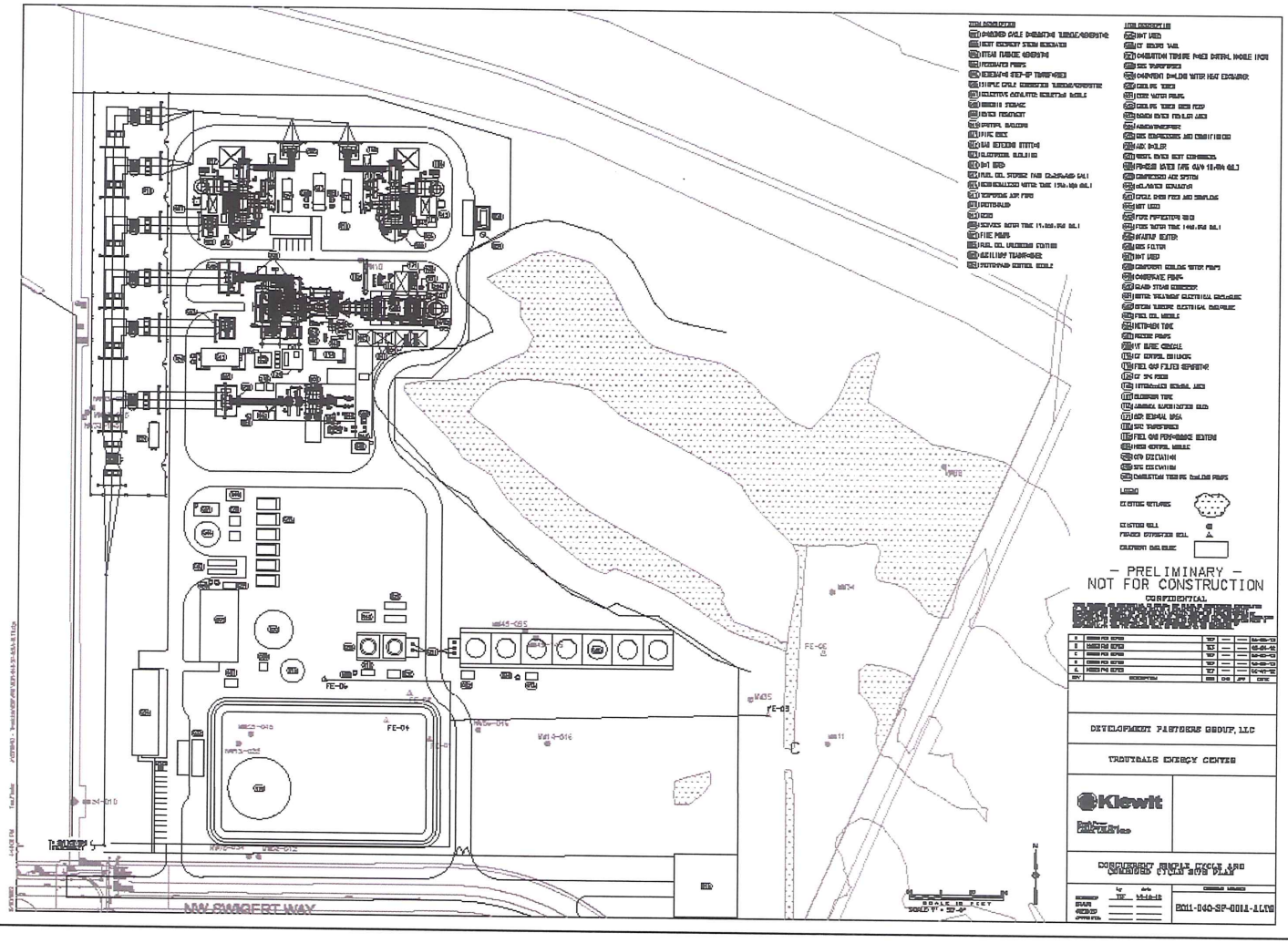
Site Layout



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Project TTD Activity Summary

- **TEC TTD Airport Related Activity to Date**
  - 1/24/2012 Received letter from Mary Rosenblum
  - 1/26/2012 Talked with Mary Rosenblum and Bob Hall at initial public meeting for TEC
  - 3/5/2012 Filed 7460's with FAA
  - 3/14/2012 TEC consultants met with FAA Flight Standards in Renton, WA
  - 3/19/2012 Met with Mary Rosenblum, Bob Hall and Port of Portland
  - 3/19/2012 Received FAA Non-hazard Determinations for TEC
  - 4/20/2012 Retained Williams Aviation Consultants to address OPA issues raised in petition to FAA
  - 6/1/2012 Committed to redesigned cooling towers
  - 6/29/2012 Filed 7460's with FAA on new cooling towers

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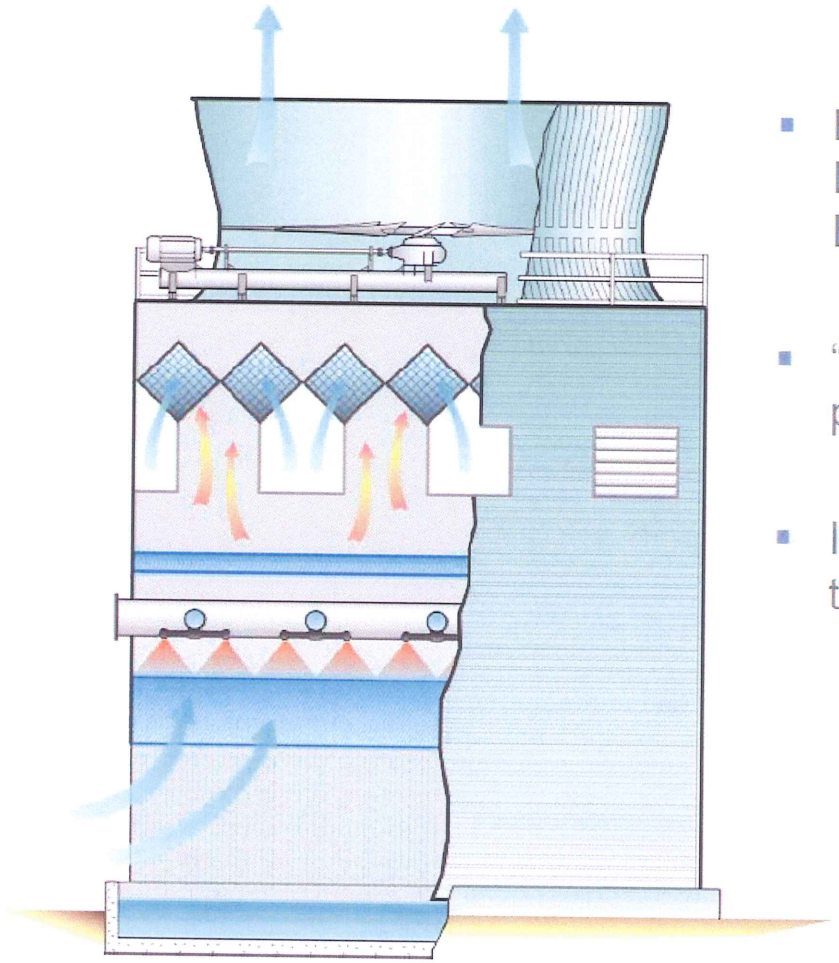
Cooling Tower Mitigation



- Based on technology backed by U.S. Department of Energy (DOE) National Energy Technology Laboratory (NETL)
- "Innovation for Existing Power Plants" program
- Improvement over traditional coil tower technology

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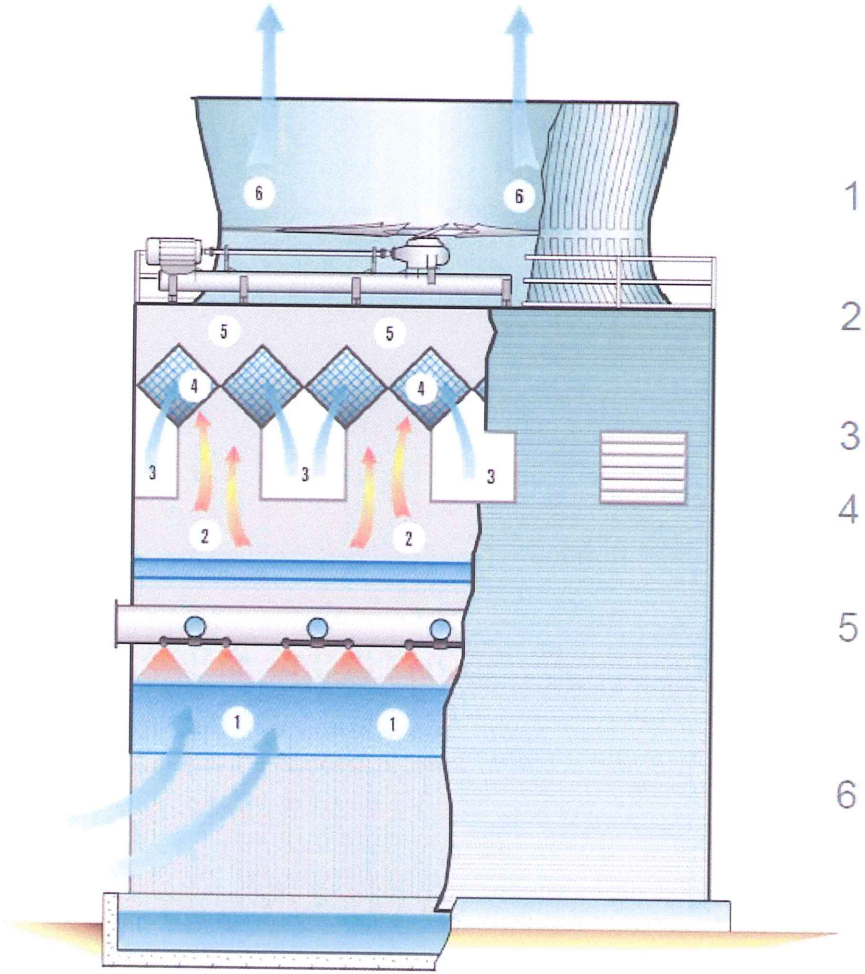
Cooling Tower Mitigation



1 – Ambient air passes through wet section

2 – Warm, saturated air between alternate pairs of plates

3 – Ambient air passes into ducts

4 – Air turns in between alternate pairs of plates

5 – Cooler saturated air from the wet section side and warmer drier air from ambient side mix together

6 – Air leaving

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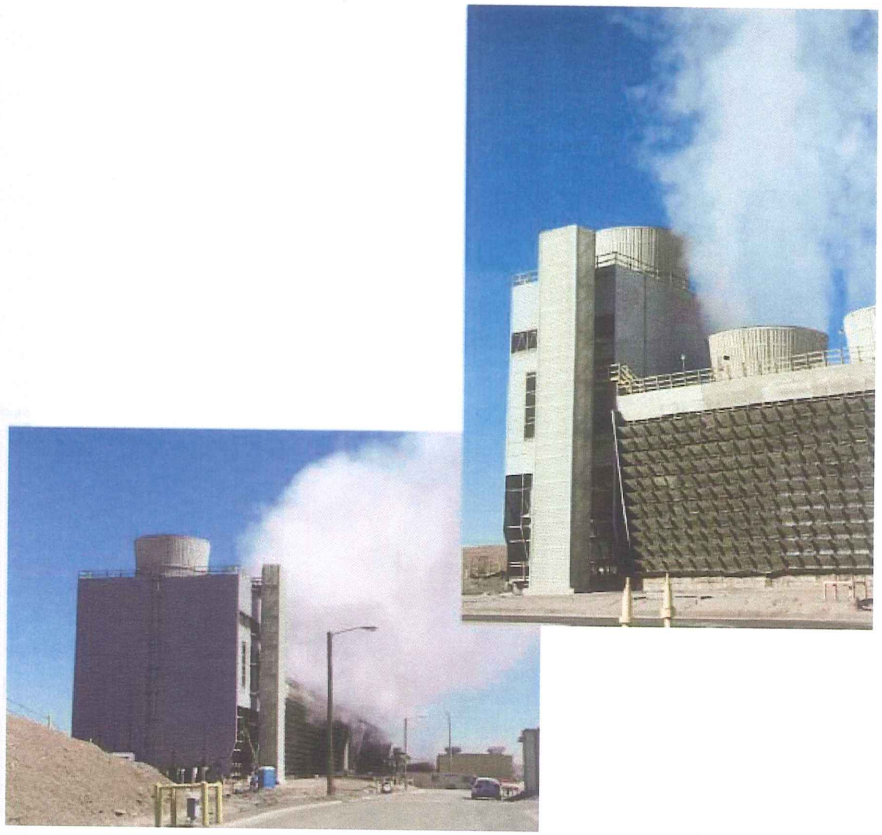
Cooling Tower Mitigation

Background

- Site: APS – San Juan Generating Station
  - *Coal-fired power plant*
  - *Baseload 24/7*
  - *New Mexico, US*
- Built: 2007
- Solution:
  - *ClearSky technology*

Details

- Ambient conditions: *(30˚F / 70%RH)*
- Plume abatement cell is operating at the same temperature conditions as other cells
- Note lack of visible plume



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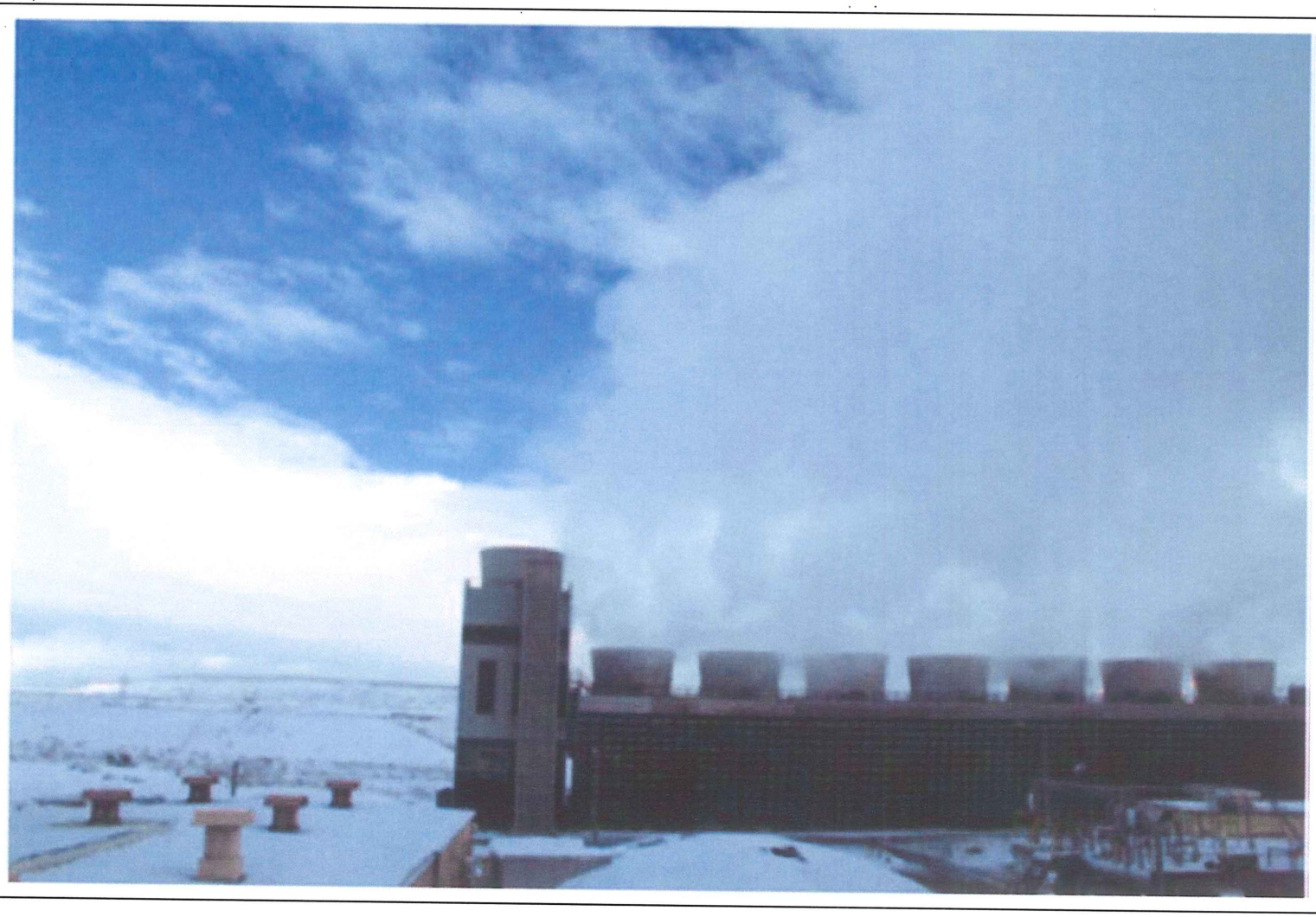
Cooling Tower Mitigation