



U.S. Department of Energy

OAK RIDGE NATIONAL LABORATORY

CHP Subcontractors Coordination Review Meeting

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April 22, 2004

Oak Ridge National Laboratory's
Washington D.C. Office

DEVELOPMENT OF A PRELIMINARY ENVIRONMENTAL PERMITTING SCREENING TOOL

Tool to assist facilities installing CHP equipment determine the applicable environmental regulations and standards. This tool is applicable to small gas turbines between 1 and 5 MW in assessing air permitting requirements and resulting operation limitations during the planning phase of a project to help owners determine economic feasibilities of CHP projects.

I. C. Thomasson Associates, Inc.

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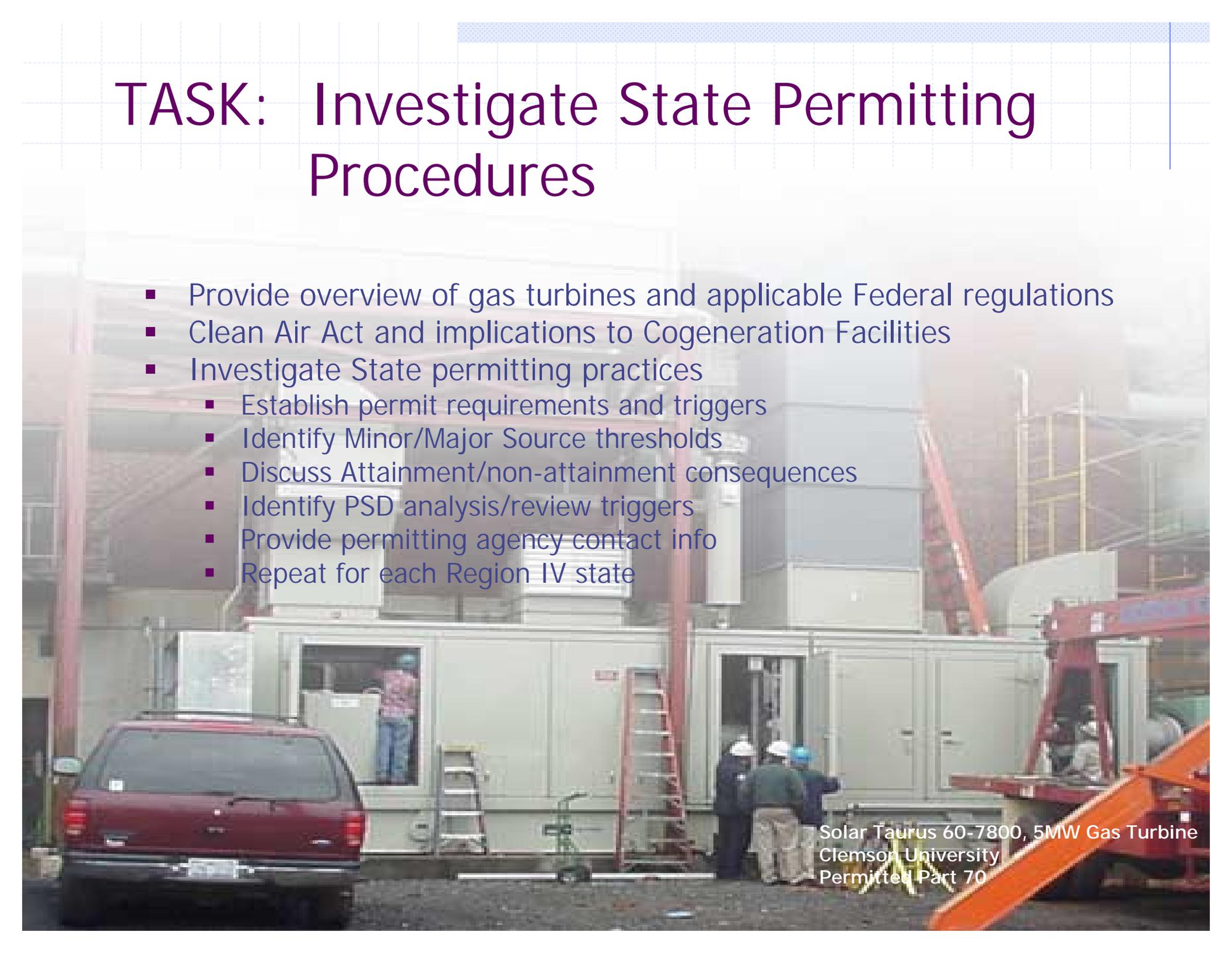
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General Electric 5 MW Gas Turbine
Vanderbilt University
Permitted Part 70 for PSD

TASK: Investigate State Permitting Procedures

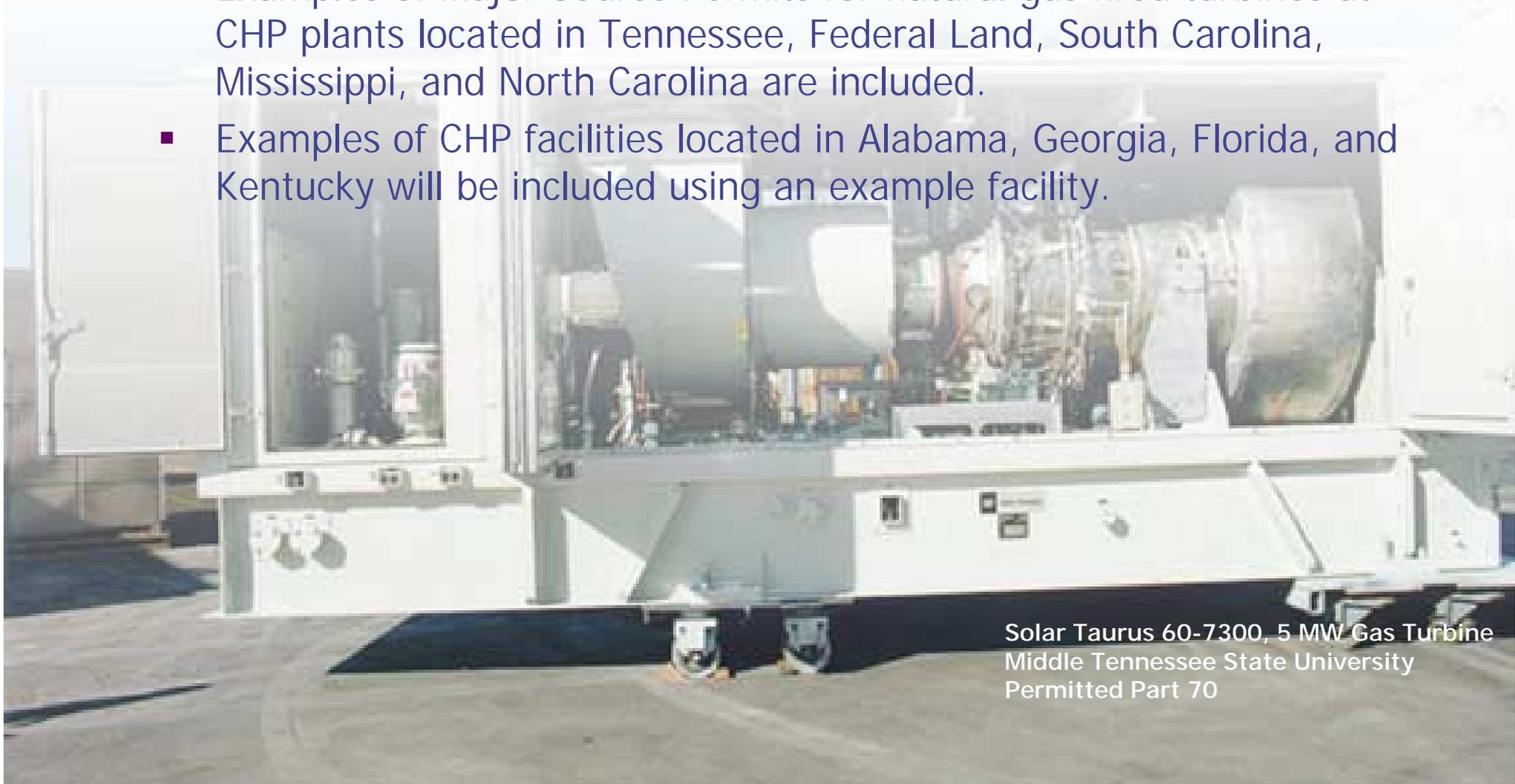
- Provide overview of gas turbines and applicable Federal regulations
- Clean Air Act and implications to Cogeneration Facilities
- Investigate State permitting practices
 - Establish permit requirements and triggers
 - Identify Minor/Major Source thresholds
 - Discuss Attainment/non-attainment consequences
 - Identify PSD analysis/review triggers
 - Provide permitting agency contact info
 - Repeat for each Region IV state



Solar Taurus 60-7800, 5MW Gas Turbine
Clemson University
Permitted Part 70

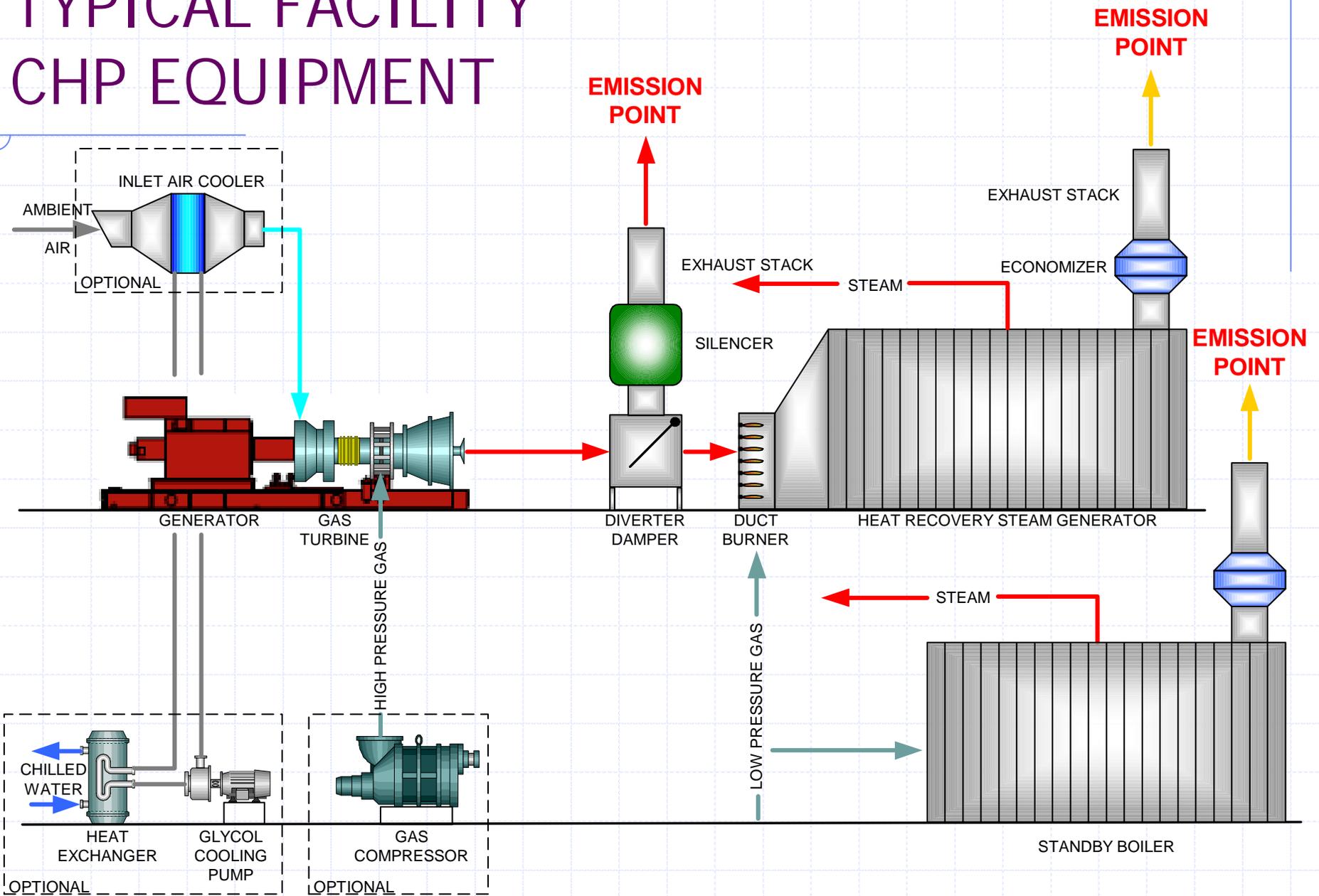
TASK: Prepare State Air Permitting Guidance

- Examples of Major Source Permits for natural gas fired turbines at CHP plants located in Tennessee, Federal Land, South Carolina, Mississippi, and North Carolina are included.
- Examples of CHP facilities located in Alabama, Georgia, Florida, and Kentucky will be included using an example facility.



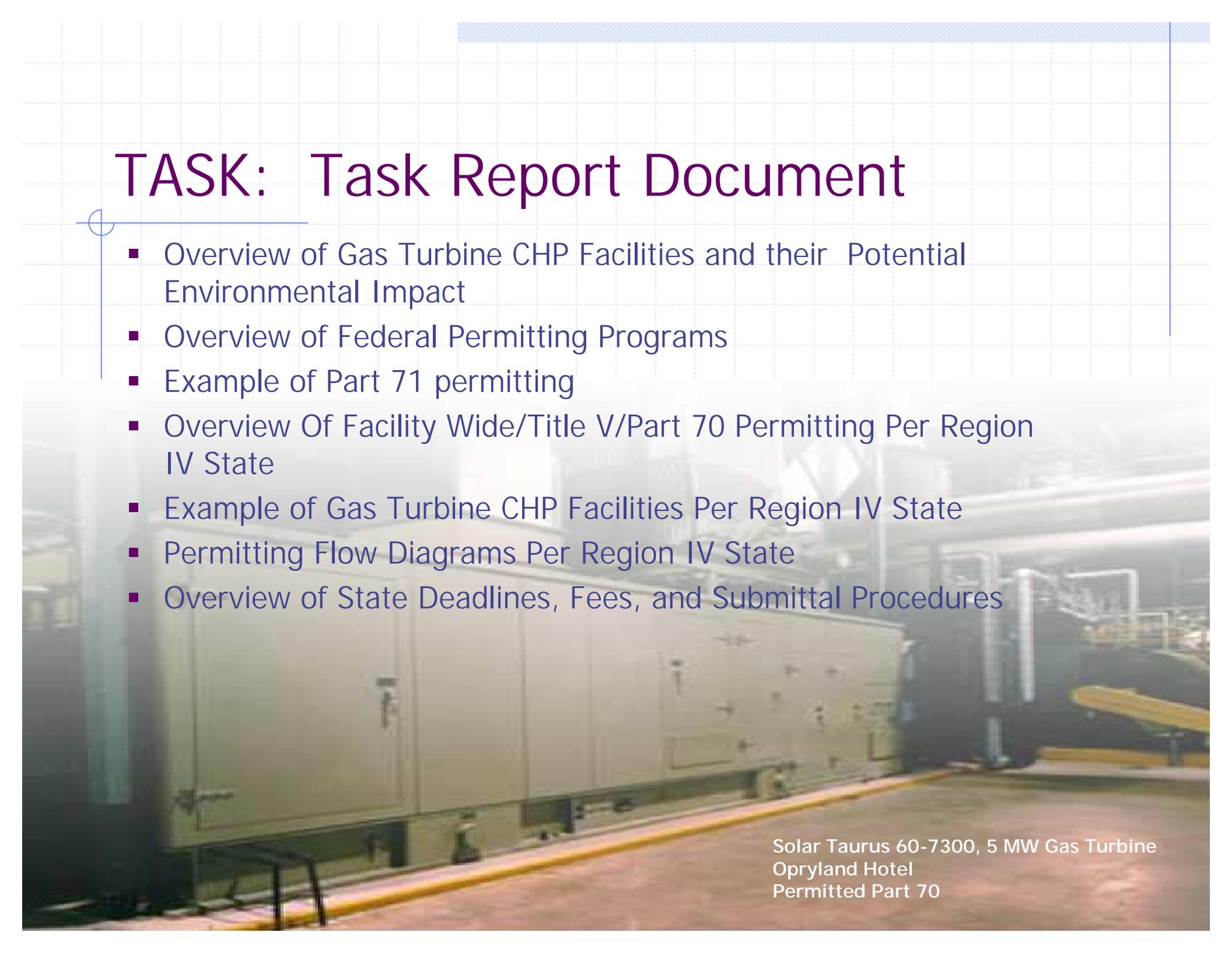
Solar Taurus 60-7300, 5 MW Gas Turbine
Middle Tennessee State University
Permitted Part 70

TYPICAL FACILITY CHP EQUIPMENT



TASK: Task Report Document

- Overview of Gas Turbine CHP Facilities and their Potential Environmental Impact
- Overview of Federal Permitting Programs
- Example of Part 71 permitting
- Overview Of Facility Wide/Title V/Part 70 Permitting Per Region IV State
- Example of Gas Turbine CHP Facilities Per Region IV State
- Permitting Flow Diagrams Per Region IV State
- Overview of State Deadlines, Fees, and Submittal Procedures

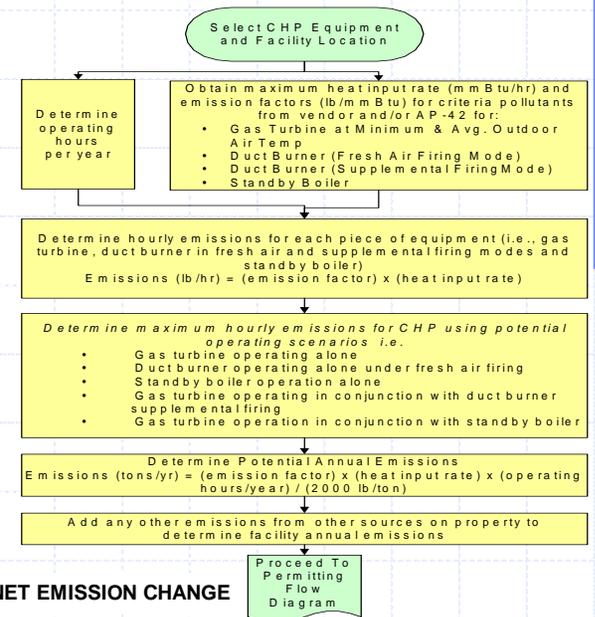


Solar Taurus 60-7300, 5 MW Gas Turbine
Opryland Hotel
Permitted Part 70

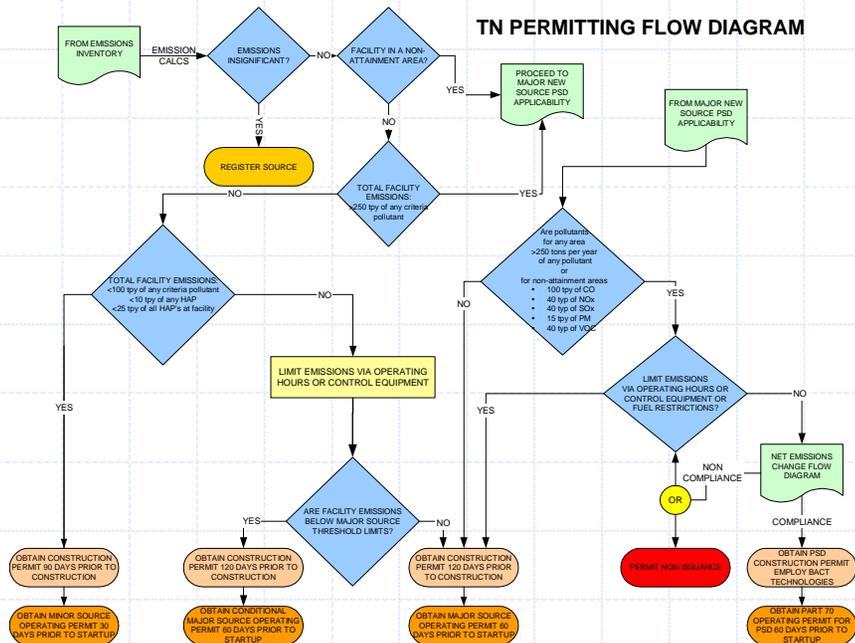
Description of Progress Against Task(s)

- Flow Diagrams for
 - Emission Inventory Determination
 - Net Emission Change
 - State Permitting Procedures
- Emission Calculations for an example Cogeneration Facility

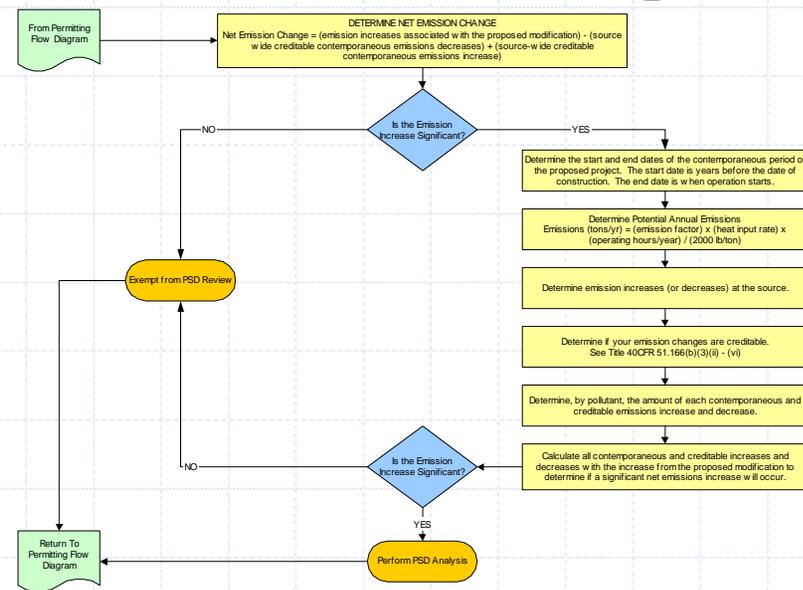
EMISSIONS INVENTORY



TN PERMITTING FLOW DIAGRAM



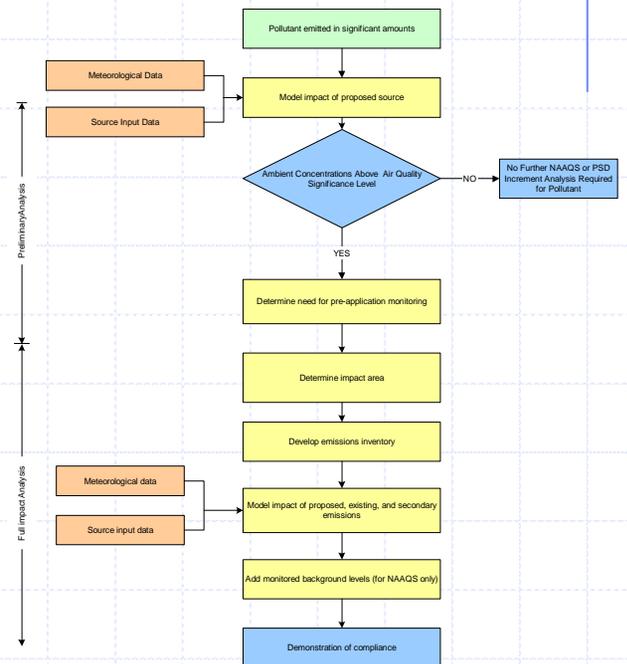
DETERMINE NET EMISSION CHANGE



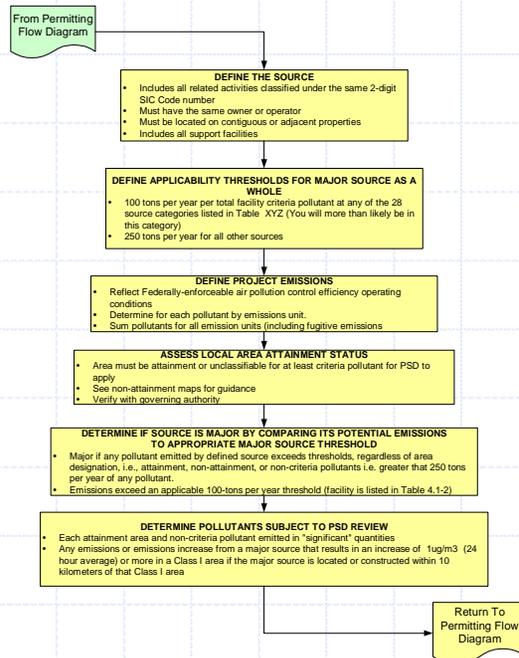
Description of Progress Against Task(s)

- Flow Diagrams for
 - Air Quality Analysis
 - Federal Permitting Procedures
 - New Source PSD Determination
- Emission Calculations for an example Cogeneration Facility

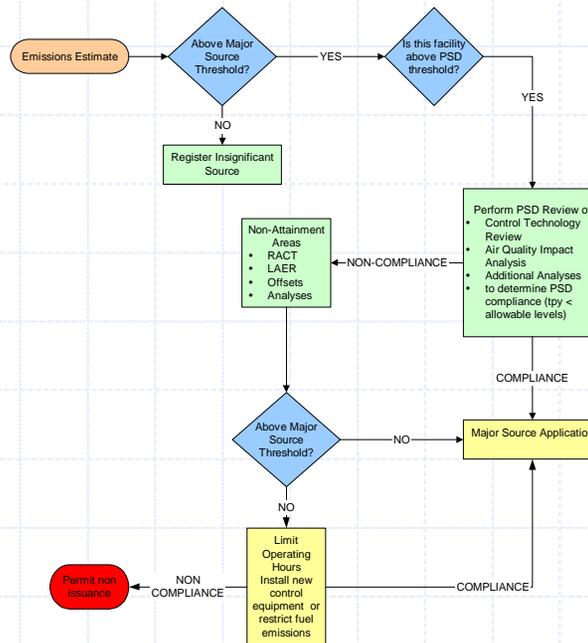
Basic Steps in the Air Quality Analysis (NAAQS and PSD Increments)



MAJOR NEW SOURCE PSD APPLICABILITY



FEDERAL PERMITTING FLOW DIAGRAM



Coordination with Interested Parties and Other Project Teams

- Facility Managers
- CHP Project Evaluation Teams
- Regional CHP Application Centers
- State Permitting Agencies

Solar Taurus 60-7800 5 MW Gas Turbine
Fort Bragg COE
Permitted Part 70 for PSD

FY04-05 Timeline

Date	%	Task Description
4/03	0	1. Kickoff—project plan, fee and milestone schedules
6/03-9/03	20	2. Catalog equipment, heat rate, define scope of equipment and permitting type
9/03	20	3. First Task Report submittal--progress check
9/03-12/03	30	4. Research TN state permitting processes
12/03-3/04	40	5. Develop streamlined process for TN permitting
12/03-4/22	40	6. Create Flow Diagrams for TN
4/22	40	7. Present, Review, and Comment—Meeting, review and comment
4/22-12/04	50	8. Repeat 3-5 for 7 remaining Region IV states, address comments for TN
12/04	80	9. Completed Region IV permitting matrices—Meeting, review and comment
12/04-3/05	85	10. Overview of facility wide permitting and steps to incorporate CHP equipment, interface issues
12/04-3/05	90	11. Overview of Greenfield CHP facility permitting
6/05	100	12. Final Report—Meeting, review and comment

Questions?

(Three Following slides have larger Flow Chart Figures)

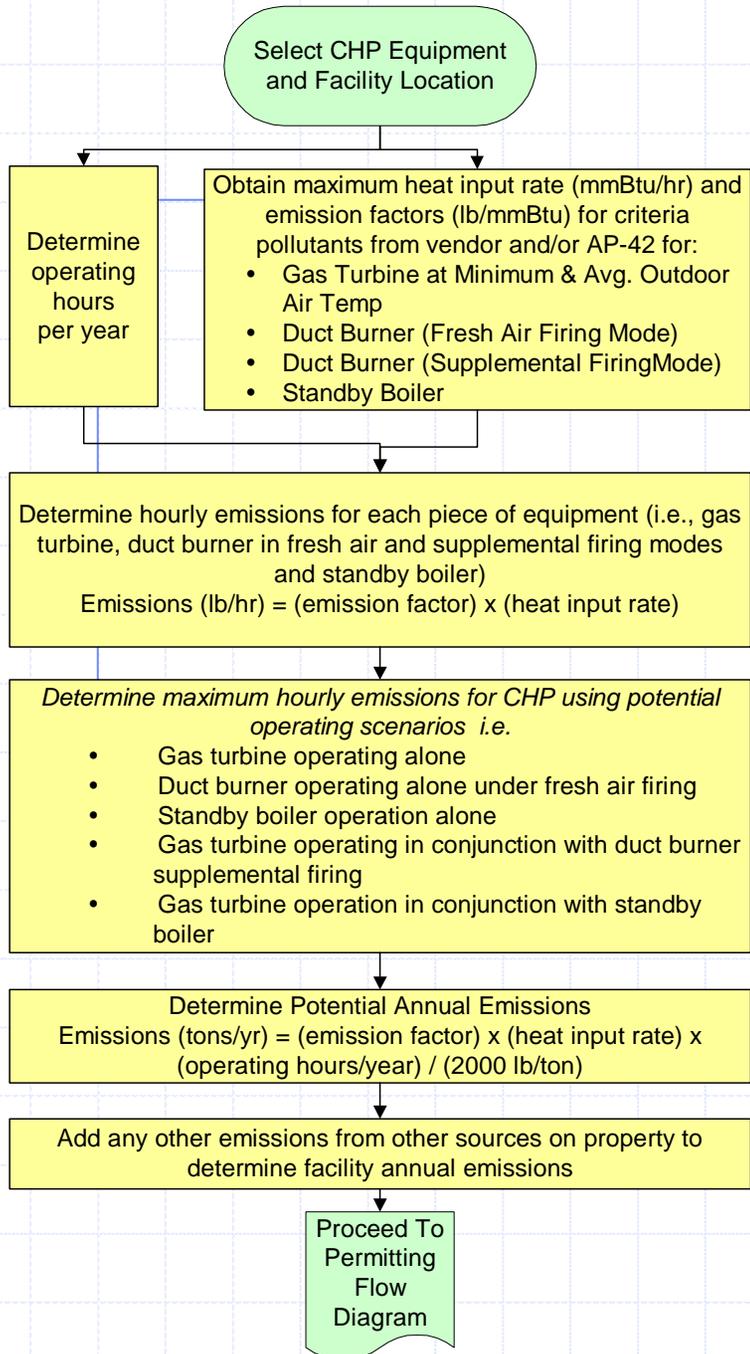
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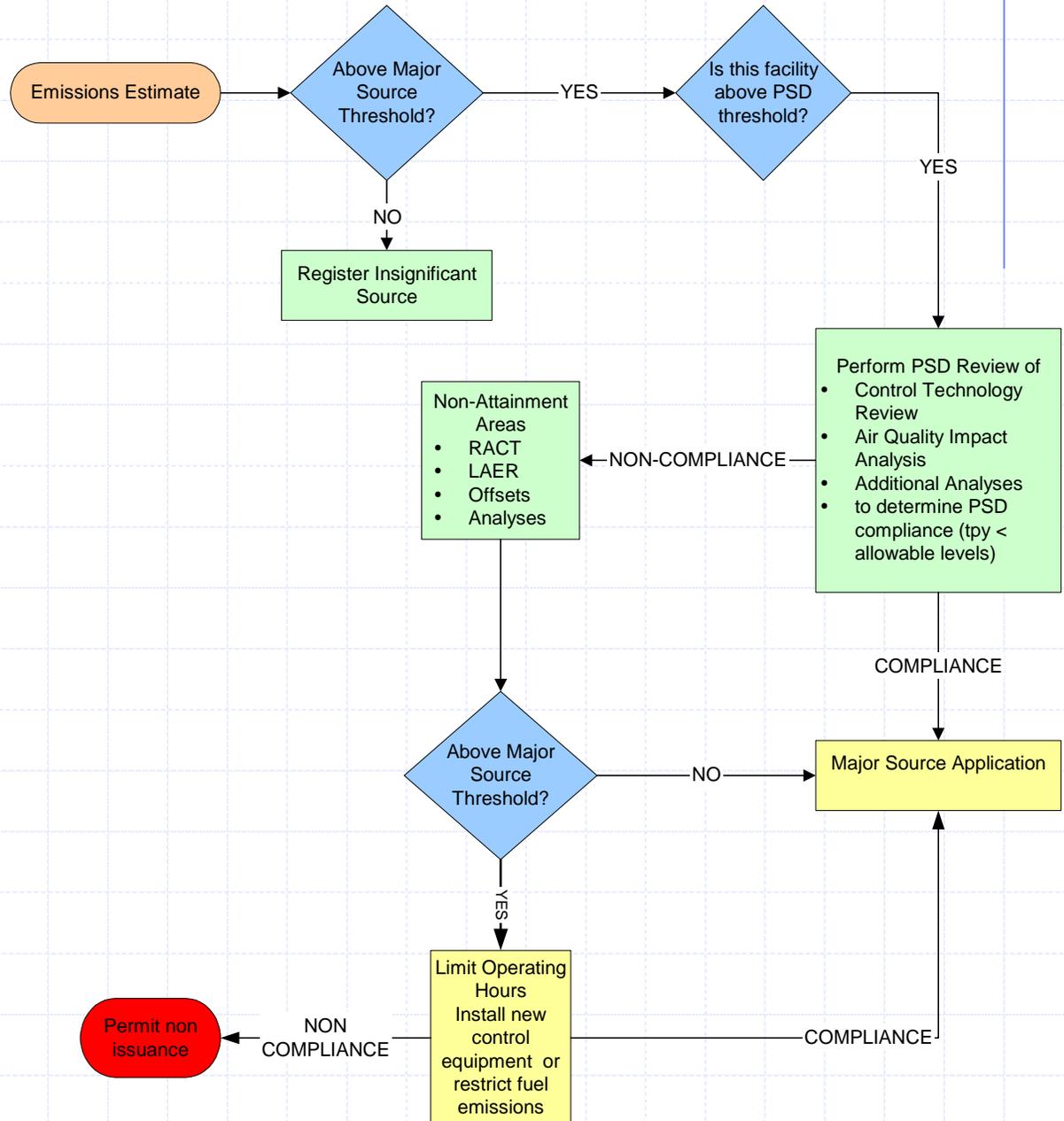


Solar Taurus 60-7800 5 MW Gas Turbine
Turning Stone
Permitted Part 70 for PSD

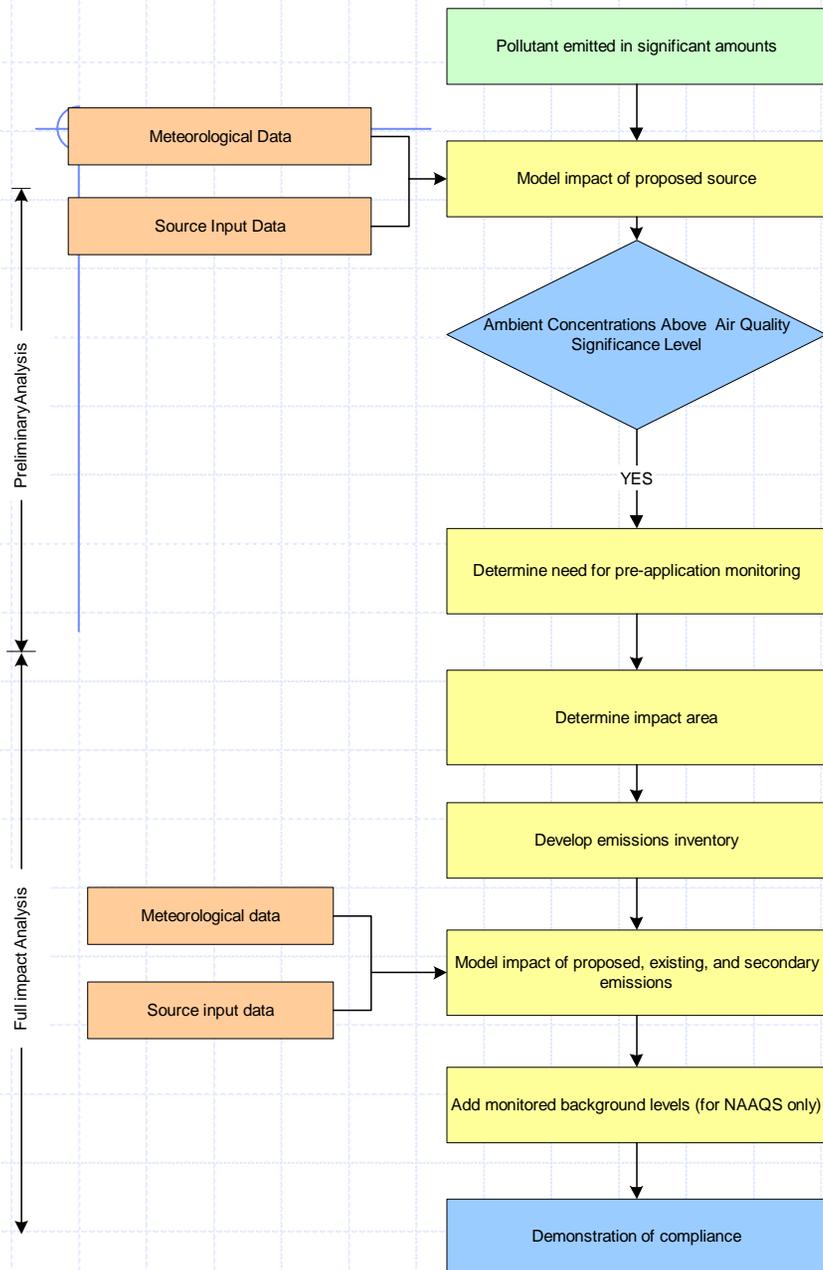
EMISSIONS INVENTORY



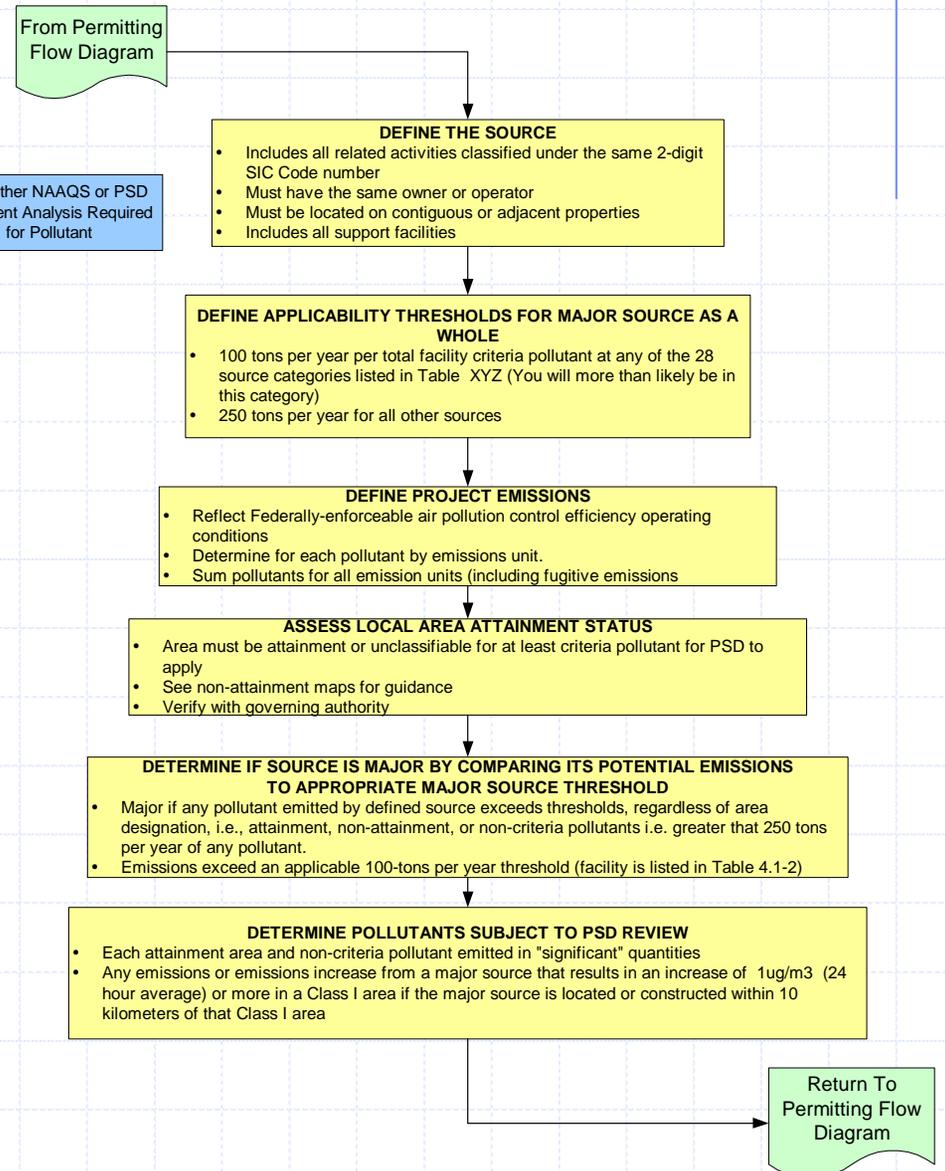
FEDERAL PERMITTING FLOW DIAGRAM



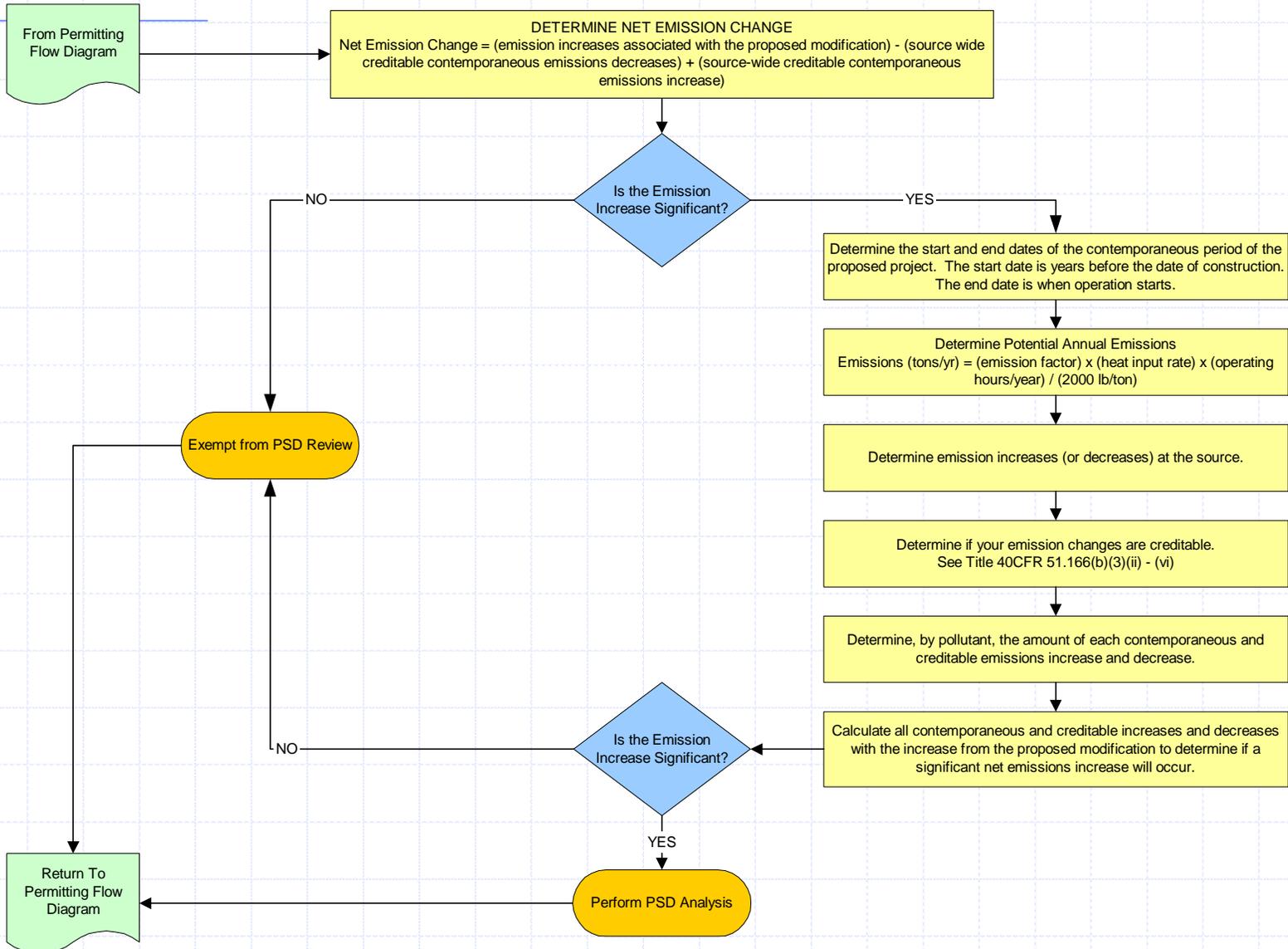
Basic Steps in the Air Quality Analysis (NAAQS and PSD Increments)



MAJOR NEW SOURCE PSD APPLICABILITY



DETERMINE NET EMISSION CHANGE



TN PERMITTING FLOW DIAGRAM

