State of California

The Resources Agency of California

Memorandum

To: Colusa Generating Station
Siting Committee
All parties
Maxwell Fire Department

Date: January 22, 2008

Telephone: (916) 653-1653

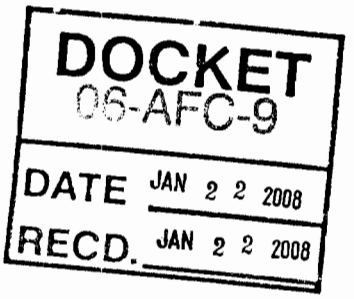
R. R.

From: **California Energy Commission**
1516 Ninth Street
Sacramento CA 95814-5512

Richard Ratliff
Staff Counsel

Subject: Revised Fire Safety Conditions and Hazardous Materials Conditions; Supplementary Testimony for Traffic and Transportation

Attached to this memorandum are 1) the revised Fire Safety and Hazardous Materials conditions of certification subject to the Committee's January 17, 2008, order regarding instructions for the evidentiary hearing, and 2) brief supplementary testimony regarding the plausibility of the temporary bridge alternative, and proposed conditions for that alternative.



Proof of Service (Revised 8/22/07) filed with original.
Mailed from Sacramento on 1/22/2008

DECLARATION OF
Rick Tyler

I, **Rick Tyler** declare as follows:

1. I am presently employed by the California Energy Commission in the environmental office of the **Energy Facilities Siting and Environmental Protection Division as a Senior Mechanical Engineer**.

2. A copy of my professional qualifications and experience is attached hereto and incorporated by reference herein.

3. I coauthored testimony on the Hazardous Material Management and Worker Safety and Fire protection sections, for the **Colusa Generating Station** project based on my independent analysis of the Application for Certification, supplements hereto, data from reliable documents and sources, and my professional experience and knowledge.

4. It is my professional opinion that the prepared testimony is valid and accurate with respect to the issue addressed therein.

5. I am personally familiar with the facts and conclusions related in the testimony and if called as a witness could testify competently thereto.

6. I declare under penalty of perjury that the foregoing is true and correct to the best of my knowledge and belief.

Dated: January 22, 2008 Signed: 

At: Sacramento, California

REVISED CONDITIONS OF CERTIFICATION FOR WORKER SAFETY AND FIRE PROTECTION

WORKER SAFETY-1 The project owner shall submit to the compliance project manager (CPM) a copy of the project construction safety and health program containing the following:

- a construction personal Protective equipment program;
- a construction exposure monitoring program;
- a construction injury and illness prevention program;
- a construction emergency action plan; and
- a construction fire prevention plan.

The personal protective equipment program, the exposure monitoring program, and the injury and illness prevention program shall be submitted to the CPM for review and approval concerning compliance of the program with all applicable safety orders. The construction emergency action plan and the fire prevention plan shall be submitted to the Maxwell Fire Protection District for review and comment prior to submittal to the CPM for approval.

Verification: At least thirty (30) days prior to the start of construction, the project owner shall submit to the CPM for review and approval a copy of the project construction safety and health program. The project owner shall provide a copy of a letter to the CPM from the Maxwell Fire Protection District providing the fire district's comments on the construction fire prevention plan and emergency action plan.

WORKER SAFETY-2 The project owner shall submit to the CPM a copy of the project operations and maintenance safety and health program containing the following:

- an operation injury and illness prevention plan;
- an emergency action plan;
- a hazardous materials management program;
- a fire prevention program (8 CCR § 3221);
- a fire protection program; and
- a personal protective equipment program (8 CCR §§ 3401 to 3411).

The operation injury and illness prevention plan, emergency action plan, and personal protective equipment program shall be submitted to the CPM for review and comment concerning compliance of the program with all applicable safety orders. The operation fire prevention program plan and the emergency action plan shall also be submitted to the Maxwell Fire Protection District for review and comment.

Verification: At least thirty (30) days prior to the start of power plant commissioning, the project owner shall submit to the CPM for approval a copy of the project operations and maintenance safety and health program. The project owner shall provide a copy of a letter to the CPM from the Maxwell Fire Protection District providing the fire district's comments on the operations hazardous materials management program, fire prevention plan and emergency action plan.

WORKER SAFETY-3 The project owner shall provide a site construction safety supervisor who, by way of training and/or experience, is knowledgeable of power-plant construction activities and relevant laws, ordinances, regulations, and standards, is capable of identifying workplace hazards relating to the construction activities, and has authority to take appropriate action to assure compliance and mitigate hazards.
The construction safety supervisor shall:

- have overall authority for coordination and implementation of all occupational safety and health practices, policies, and programs;
- assure that the safety program for the project complies with Cal/OSHA and federal regulations related to power plant projects;
- assure that all construction and commissioning workers and supervisors receive adequate safety training;
- complete accident and safety-related incident investigations, emergency response reports for injuries, and inform the CPM of safety-related incidents; and
- assure that all the plans identified in **WORKER SAFETY-1 and WORKER SAFETY-2** are implemented.

Verification: At least thirty (30) days prior to the start of site mobilization, the project owner shall submit to the CPM the name and contact information for the construction safety supervisor . The contact information of any replacement construction safety supervisor shall be submitted to the CPM within one business day.

The construction safety supervisor shall submit in the monthly compliance report a monthly safety inspection report to include:

- a record of all employees trained for that month (all records shall be kept on site for the duration of the project);
- a summary report of safety management actions and safety-related incidents that occurred during the month;
- a report of any continuing or unresolved situations and incidents that may pose danger to life or health; and
- a report of accidents and injuries that occurred during the month.

WORKER SAFETY-4 The project owner shall make payments to the chief building official (CBO) for the services of a safety monitor based upon a reasonable fee schedule to be negotiated between the project owner and the CBO.

Those services shall be in addition to other work performed by the CBO. The safety monitor shall be selected by and report directly to the CBO, and shall be responsible for verifying that the construction safety supervisor, as required in **WORKER SAFETY-3**, implement all appropriate Cal/OSHA and Energy Commission safety requirements. The safety monitor shall conduct onsite (including linear facilities) safety inspections at intervals necessary to fulfill those responsibilities.

Verification: Prior to the start of construction, the project owner shall provide proof of its agreement to fund the safety monitor services to the CPM for review and approval.

WORKER SAFETY-5 The project owner shall ensure that a portable automatic cardiac defibrillator is located on site during construction and operation and shall implement a program to ensure that workers are properly trained in its use and that the equipment is properly maintained and functioning at all times.

Verification: At least 30 days prior to the start of site mobilization, the project owner shall submit to the CPM for review and approval proof that a portable automatic cardiac defibrillator exists on site and a copy of the defibrillator training and maintenance.

WORKER SAFETY – 6 The project owner shall either (1) reach an agreement with the Maxwell fire department regarding the funding of resources to mitigate potential impacts on fire protection services or if no agreement can be reached shall (2) fund an independent consultants study to evaluate the following:

- Potential for impacts on local fire protection and costs of new local fire protection services necessary to mitigate such impacts;
- The risk of impact on the local population that could result from potential unmitigated impacts on local fire protection services;
- The extent to which local tax revenue from the project will provide funding to reduce impacts on local fire protection services;
- Recommend the amount of funding that should be provided to mitigate any identified significant impacts on local fire protection services.

COMPLIANCE PROTOCOLS

- The project owner shall provide a protocol for conducting the independent consultant study for review and approval by the CEC CPM prior to conducting the study.
- The independent consultant study shall be funded by the project owner and conducted by a consultant approved by the CEC CPM.
- No construction of above ground structures shall occur until either an agreement is reached between the project owner and the Maxwell Fire Department or funding of mitigation pursuant to the staff approved independent consultant study has been provided to the Maxwell Fire Department.
- In the event that the parties disagree with the consultant's recommendations the CEC CPM shall, based on the results of the CEC CPM approved independent consultant study, make the final determination regarding the mitigation measures that will be required and the amounts of funding to be provided to the Maxwell Fire Department to accomplish any required mitigation.

Verification: – The project owner shall provide the CEC CPM with a copy of the agreement with the Maxwell Fire Department; or a study outline and scope of work for the proposed independent consultant study and qualifications for proposed contractors for approval. The project owner shall provide the CEC CPM with a copy of the completed study prior to any construction of aboveground structures at the project site. Annually thereafter, the owner shall provide the CEC CPM with verification of funding to the Maxwell Fire Department for required fire protection services mitigation pursuant to the CEC CPM approved independent consultant study.

~~**WORKER SAFETY- 6** The project owner shall provide $230,000 to the Maxwell Fire Department annually to ensure adequacy of fire protection services. The project owner can request that the annual payment be reduced by the amount of revenue received by the Department as a result of transfer of local tax revenue resulting form the project.~~

~~**Verification:** At least 30 days prior to the start of site mobilization, and annually thereafter the project owner shall provide documentation of the payment described above to the CPM. The CPM can adjust the required payment based on local tax revenue received by the Department as described above.~~

REVISED CONDITIONS OF CERTIFICATION FOR HAZARDOUS MATERIALS MANAGEMENT

HAZ-1 The project owner shall not use any hazardous materials not listed in **Appendix C**, below, or in greater quantities than those identified by chemical name in **Appendix C**, below, unless approved in advance by the CPM.

Verification: The project owner shall provide to the CPM, in the annual compliance report, a list of hazardous materials and storage quantities contained at the facility.

HAZ-2 The project owner shall concurrently provide a business plan and a risk management plan (RMP) to the Certified Unified Program Authority (CUPA – Colusa County Department of Environmental Health) and the CPM for review at the time the RMP is first submitted to the U.S. Environmental Protection Agency (EPA). After receiving comments from the CUPA, the EPA, and the CPM, the project owner shall reflect all recommendations in the final documents. Copies of the final business plan and RMP shall then be provided to the CUPA and EPA for information and to the CPM for approval.

Verification: At least sixty (60) days prior to receiving any hazardous material on the site for commissioning or operations, the project owner shall provide a copy of a final business plan to the CPM for approval. At least sixty (60) days prior to delivery of aqueous ammonia to the site, the project owner shall provide the final RMP to the CUPA for information and to the CPM for approval.

HAZ-3 The project owner shall develop and implement a safety management plan for delivery of aqueous ammonia. The plan shall include procedures, protective equipment requirements, training, and a delivery procedures checklist. It shall also include a section describing all measures to be implemented to prevent mixing of aqueous ammonia with incompatible hazardous materials.

Verification: At least sixty (60) days prior to the first delivery of aqueous ammonia to the facility, the project owner shall provide a safety management plan as described above to the CPM for review and approval.

HAZ-4 The aqueous ammonia storage facility shall be designed to either the American Society for Material Engineering Pressure Vessel Code and ANSI K61.6 or to API 620. In either case, the storage tank shall be protected by a secondary containment basin capable of holding 125 percent of the storage volume or the storage volume plus the volume associated with 24 hours of rain assuming the 25-year storm. The final design drawings and specifications for the ammonia storage tank and secondary containment basins shall be submitted to the CPM for review and approval.

Verification: At least sixty (60) days prior to the first delivery of aqueous ammonia to the facility, the project owner shall submit final design drawings and specifications for the ammonia storage tank and secondary containment basin to the CPM for review and approval.

HAZ-5 The project owner shall ensure that no flammable material is stored within 50 feet of the sulfuric acid tank.

Verification: At least sixty (60) days prior to the first receipt of sulfuric acid on site, the project owner shall provide to the CPM copies of the facility design drawings showing the location of the sulfuric acid storage tank and the location of any tanks, drums, or piping containing any flammable materials.

HAZ-6 The project owner shall direct all vendors delivering aqueous ammonia to the site to use only tanker-truck transport vehicles that meet or exceed the specifications of U.S. DOT Code MC-307.

Verification: At least sixty (60) days prior to the first receipt of aqueous ammonia on site, the project owner shall submit to the CPM for review and approval copies of the notification letter to supply vendors indicating the transport vehicle specifications.

HAZ-7 The project owner shall direct all vendors delivering any hazardous material to the site to use only the route approved by the CPM (from Interstate 5 to Delevan Road, north on McDermott Road, and left (west) on Dirks Road.) ~~710, west along Bandini Boulevard, south on Downey Street, west on Fruitland Avenue, and south on Boyle Avenue to the CGS plant site)~~. The project owner shall submit any desired change to the approved delivery route to the CPM for review and approval.

Verification: At least sixty (60) days prior to receipt of any hazardous materials on site, the project owner shall submit copies of the required transportation route limitation direction to the CPM for review and approval.

HAZ-8 At least 30 days prior to commencing construction, a site-specific construction site security plan for the construction phase shall be prepared and made available to the CPM for review and approval. The construction security plan shall include the following:

1. perimeter security consisting of fencing enclosing the construction area;
2. security guards;
3. site access control consisting of a check-in procedure or tag system for construction personnel and visitors;
4. written standard procedures for employees, contractors, and vendors when encountering suspicious objects or packages on site or off site;
5. protocol for contacting law enforcement and the CPM in the event of suspicious activity or emergency; and
6. evacuation procedures.

Verification: At least thirty (30) days prior to commencing construction, the project owner shall notify the CPM that a site-specific construction security plan is available for review and approval.

HAZ-9 To determine the level of security appropriate for this power plant, the project owner shall prepare and submit a vulnerability assessment as part of the operations security plan to the CPM for review and approval. The vulnerability assessment shall be prepared according to guidelines issued by the North American Electrical Reliability Council (NERC 2002), the U.S. Department of Energy (DOE 2002), and the U.S. Department of Justice Chemical Facility Vulnerability Assessment Methodology (US DOJ 2002). Physical site security shall be consistent with the guidelines issued by the NERC (Version 1.0, June 14, 2002) and the U.S. DOE (2002) and will also be based, in part, on the use, storage, and quantity of hazardous materials present at the facility.

The project owner shall also prepare a site-specific security plan for the operational phase, which shall be made available to the CPM for review and approval. The project owner shall implement site security measures addressing physical site security and hazardous materials storage. The level of security to be implemented will be determined by the results of the vulnerability assessment but in no case shall the level of security be less than that described below (NERC 2002).

The operation security plan shall include the following:

1. specifications for a permanent, full perimeter fence or wall, at least 8 feet high;
2. specifications for a main entrance security gate, either hand operated or motorized;

3. evacuation procedures;

4. protocol for contacting law enforcement and the CPM in the event of suspicious activity or emergency;

5. written standard procedures for employees, contractors, and vendors when encountering suspicious objects or packages on or off site;

6. requirements for site personnel background checks, including employee and routine onsite contractors. Site personnel background checks are limited to ascertaining that the employee's claims of identity and employment history are accurate. All site personnel background checks shall be consistent with state and federal law regarding security and privacy;

7. site access controls for employees, contractors, vendors, and visitors;

8. requirements for hazardous materials vendors to prepare and implement security plans as per 49 CFR 172.800 and to ensure that all hazardous materials drivers are in compliance with personnel background security checks as per 49 CFR Part 1572, subparts A and B;

9. specifications for a closed-circuit TV monitoring system, recordable and viewable in the power plant control room and security station (if separate from the control room), capable of viewing, at a minimum, the main entrance gate and the ammonia storage tank; and

10. additional measures to ensure adequate perimeter security consisting of either:

    A. security guards present 24 hours per day, 7 days per week; or

    B. power plant personnel on site 24 hours per day, 7 days per week and, all of the following:

        1) the CCTV monitoring system required in number 9 above shall include cameras that are able to pan, tilt, and zoom, shall have low-light capability, shall be recordable, and shall be able to view 100 percent of the perimeter fence, the ammonia storage tank, the outside entrance to the control room, and the front gate from a monitor in the power plant control room; and

        2) Perimeter breach detectors or onsite motion detectors

        The project owner shall fully implement the security plans and obtain CPM approval of any substantive modifications to the security plans. The CPM may authorize modifications to these measures, or may require additional measures, such as protective barriers for critical power pant components (e.g., transformers, gas lines, compressors, etc.) depending on circumstances unique to the

facility or in response to industry-related standards, security concerns, or additional guidance provided by the U.S. Department of Homeland Security, the U.S. Department of Energy, or the North American Electrical Reliability Council, after consultation with appropriate law enforcement agencies and the applicant.

Verification: At least thirty (30) days prior to the initial receipt of hazardous materials on site, the project owner shall notify the CPM that a site-specific vulnerability assessment and operations site security plan are available for review and approval.

TRAFFIC AND TRANSPORTATION
TEMPORARY BRIDGE DESIGN

Supplemental Testimony of Brian Payne, P.E.

INTRODUCTION

The January 18, 2008 letter from Latham and Watkins LLP, submitted on behalf of the Applicant has been reviewed. This letter transmits a document prepared by URS Corporation regarding the installation of a Temporary "Jumper" Bridge over the Glenn-Colusa Canal. The "Jumper" bridge is being considered as an alternative to the replacement of the existing bridge, which was originally designed to support a 40 ton load, but is currently rated as an H-20 (20 ton) structure. The existing bridge consists of four spans, crossing a total of 74-feet and is 20-feet wide; the existing structure is not structurally adequate to support the maximum construction load of 270 tons.

The Applicant is proposing the installation of a temporary bridge structure, to be supplied by The Bigge Group. The assembled bridge is 120-feet long. The ends of the temporary structure are normally supported on timbers, placed directly on the ground to spread the load and keep the bearing load within allowable soil pressure limits. The modular bridge construction allows the structure to be installed in widths ranging from 12 to 22-feet. A 20-foot width has been proposed by the Applicant. The Applicant has proposed three different locations – above the deck of the existing bridge and to either the north or south of the existing bridge. If the "Jumper" bridge were installed above the existing bridge deck, it would be elevated to insure that it does not transfer loads to the existing structure, which would cause it to be over-stressed.

According to the vender's literature, the "Jumper" bridge structure has a capacity of 1,000 tons at an 80-foot clear span length and 830 tons at a 100-foot clear span length. The structure's rating exceeds the Applicant's reported heaviest load of 270 tons. In 2004, this structure was certified by the Connecticut Yankee Nuclear Power Plant and was used to transport an 830 ton reactor vessel package using a 94-foot span configuration; the reactor vessel was transported using a hydraulic platform trailer.

SUMMARY OF CONCLUSIONS

The Applicant's proposed alternative "Jumper" bridge crossing of the Glenn-Colusa Canal is feasible. However, the installation details, structural capacity, foundation loads and other engineering details should be carefully examined prior to installation.

RECOMMENDATIONS

I recommend that:

1. The Conditions of Certification proposed herein be adopted to ensure that the temporary bridge structure is designed and constructed to assure public health and safety, and to ensure compliance with all applicable engineering LORS;

2. The temporary bridge structure be designed and built to the 2007 CBC (or successor standard, if such is in effect when the initial project engineering designs are submitted for review); and

3. The CBO shall review the final designs, conduct plan checking and perform field inspections during construction, and Energy Commission staff shall audit and monitor the CBO to ensure satisfactory performance.

RECOMMENDED CONDITIONS OF CERTIFICATION

TEMP–1 The project owner shall submit to the Chief Building Official, at least 90 days prior to installation, the following documents for review and approval the following:

1. Civil and structural design drawings of the proposed bridge structure, grading plans, and footing designs;

2. Soils report, prepared in accordance with the 2007 California Building Code (CBC) documenting the allowable soil bearing and lateral capacity; and

3. Related calculations and specifications signed and stamped by the responsible civil or structural engineer.

TEMP–2 The project owner shall perform inspections during installation in accordance with the 2007 CBC and the project Conditions of Certification.

TEMP–3 After installation of the temporary bridge structure, the project owner shall obtain the CBO's approval of the final installation prior to use.

TEMP–4 The project owner shall ensure that the temporary bridge structure is designed and installed in compliance with the Facility Design Conditions of Certification.

BEFORE THE ENERGY RESOURCES CONSERVATION AND DEVELOPMENT COMMISSION OF THE STATE OF CALIFORNIA

APPLICATION FOR CERTIFICATION
FOR THE *COLUSA GENERATING STATION PROJECT*

Docket No. 06-AFC-9
PROOF OF SERVICE
(REVISED 8/22/2007)

INSTRUCTIONS: All parties shall 1) send an original signed document plus 12 copies OR 2) mail one original signed copy AND e-mail the document to the web address below, AND 3) all parties shall also send a printed OR electronic copy of the documents that shall include a proof of service declaration to each of the individuals on the proof of service:

CALIFORNIA ENERGY COMMISSION
Attn: Docket No. 06-AFC-9
1516 Ninth Street, MS-4
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