TRAFFIC AND TRANSPORTATION
TEMPORARY BRIDGE DESIGN

Supplemental Testimony of Brian Payne, P.E.

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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.