



26 January 2017

Mr. Eric Dausman
General Manager
Sutro Tower Inc.
1 La Avanzada Street
San Francisco, CA 94131

Project 067199.11 – Condition Assessment of Sutro Tower, 2017 Inspections
2016 Maintenance and Inspection Program

Dear Mr. Dausman:

At your request, Simpson Gumpertz & Heger Inc. (SGH) provided oversight and engineering support for tower condition assessment and repair work performed in 2016. Under agreement with the City of San Francisco (the “Standard Conditions”) Sutro Tower performs annual inspections of 1/3 of the tower, consisting of one of the three legs and the horizontal framing on one face, each year. In accordance with the inspection protocol, these inspections are typically rotated such that the entire tower is inspected over a three-year period.

On a five-year schedule, the inspection agreement calls for an in-depth inspection to identify problems which may not be readily detectable with a visual review in the annual inspection, such as evaluation of guy wire tension and inspection of welds of tower leg columns to their base plates. In addition, four years ago, you embarked on a program of temporary removal of enclosing siding on tower levels located within the typical elevations impacted by fog, so that detailed evaluation of corrosion on normally obscured surfaces could be performed. That work was completed in 2015.

In a meeting with the neighborhood liaisons in March 2014, it was agreed that the 2014 inspections would encompass two tower legs and two tower faces. Thus we are now one year ahead of schedule in performing these inspections. Accordingly, the inspections performed in 2016 actually are those originally scheduled for 2017 and include: Leg C, Mast C, the southward facing trusses, the bases of all legs and the attachment of appurtenances to these portions of the Tower. In addition, in response to the failure of a cladding panel below the 6th level of the west leg in June 2016, a thorough inspection was conducted of the attachment of cladding throughout the tower and any missing fasteners were replaced.

SGH provided TCI and Sutro Tower with inspection protocols and a series of standard forms for recording their observations. These forms as well as accompanying photographs are included in TCI’s report dated 11 January 2017. As the work progressed, TCI provided us reports of unusual observations such as bent members. We made calculations as necessary to determine if corrective action was required. This year we found that correction of such conditions is not required, though routine maintenance, including removal of corrosion and recoating is recommended.

Following the June 2016 cladding panel failure noted above, we directed crews to perform an immediate survey to locate missing cladding fasteners followed by a more thorough survey of the cladding and the support members and their attachments. During this process, we created a map of all anomalous conditions in the cladding including openings and cuts made in past tower modifications. We also retained Rowan Williams Davies & Irwin Inc. (RWDI) to conduct wind tunnel testing and develop recommendations for cladding evaluation and design pressures. This study was recently completed and we are currently performing calculations to determine the adequacy of cladding, supports and attachments, and the need for any upgrades or repairs. In the interim, during their detailed survey of cladding condition, tower repair and maintenance crews repaired obvious conditions of nonconformity including missing fasteners and informal openings. TCI presents a summary of this work in their 9 January 2017 letter report re: Review of Annual Maintenance 977-ft Self Support Tower, San Francisco, California, TCI Project Number 16.082.001.

In addition to the 9 January report, TCI has provided an additional report documenting the results of their 2017 inspections dated 11 January 2017 re: Field Evaluation of Existing 977-Foot Self-Support Tower San Francisco, California, TCI Project Number 16.082.001. In this report, TCI identified several conditions that require further evaluation or repair. These include:

1. Two rusted gusset plates between Levels 1 and 2. We recommend that during the 2017 maintenance, crews clean these gussets and provide us measurements of deterioration. We will advise if repair is necessary.
2. Three bent horizontal members on tower leg C. We evaluated these and determined that they are adequate.
3. Two skin support channels have deep cuts. We are evaluating these as part of the overall skin evaluation project described above.
4. The presence of corrosion on fastener nuts and heads. We previously provided the Tower an acceptance criteria for such corrosion. In future maintenance work, crews should “gauge” these corroded areas to determine whether replacement is needed, per the acceptance criteria.

In addition to the above, TCI identified several non-structural conditions as well as the presence of minor levels of corrosion of gussets and plugged drain holes that should be addressed during this year’s (2017) maintenance cycle.

We concur with TCI’s findings and recommendations and confirm that the reported repair work was appropriately performed.

Sincerely yours,



Ronald O. Hamburger, S.E.
Senior Principal
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