MGT REPAIR PROJECT SCOPE

1.0 Continuity of Drinking and Fire Suppression Water Supply

As part of the MGT Project, equipment will be needed to supply temporary drinking water capabilities while the MGT is out of service. This equipment will consist of fifteen tanks and interconnecting piping.

While the MGT is being drained for repair, thirteen 10,000 gallon and two 5,000 gallon temporary tanks will be located adjacent to the MGT. Ten of these tanks will be charged with MGT water during MGT draining. Three of these tanks will be charged with the last 30,000 gallons of water in the MGT. These 30,000 gallons will be tested to drinking water standards and based on results will add to the total temporary drinking water capabilities or be treated as hazardous waste. Therefore, 100,000 to 130,000 gallons of temporary water storage will be available for drinking water and fire suppression. The temporary tanks will be fed locally from the existing MGT supply piping. The temporary tanks will be physically located directly adjacent to the MGT to reduce the need for additional piping. The temporary tanks will tie back into the normal MGT discharge piping systems to the USC Facility and to the community of Two Harbors directly downstream of these lines discharge valves at the tank.

Two additional 5,000 gallon tanks will be used at the MGT to supply blasting water for coating removal. These tanks will be initially charged with MGT water during the MGT draining process, will be filtered and reused during the coating removal process and will be final disposed as hazardous waste.

All temporary tankage and piping will be located adjacent to the MGT in currently and routinely disturbed areas.

2.0 Components

<u>Mobilization</u>:

Crews will be mobilized from southern and central California to perform all repair activities. These crews will be experienced in working in rugged terrains with job sites that are accessed via secondary roadways, as well as experienced in tank and coating repair.

Materials and equipment will be staged at the normally used MGT work and lay down areas. Materials and equipment will include water tanks, mobile welding rigs, light and medium duty trucks, a fork lift, man lifts or scaffolding, floor replacement steel and barrels containing new coating material and barrels to be used for waste generated as a part of this project.

Materials will also be staged at the USC Facility adjacent to the Fisherman’s Cove landing craft ramp. These materials will include two salt water pumps, 12” aluminum and stainless steel piping, pipe fittings and valves.

Construction equipment will include a small track mounted excavator, aerial man lifts for sand blasting and recoating of the MGT interior, two truck mounted or trailer mounted welding units, a 25,000 pound fork lift, a diesel driven 30 kw portable generator, a 5 cubic yard dump truck, 13 portable 10,000 gallon water tanks and 2 portable 5,000 gallon water tanks. All additional equipment will be stored at the MGT in normal work areas around the tank, or in the tank lay down area adjacent to the tank. All fueled equipment will be checked daily for leaks and monitored for leaks continuously while in service. Refueling will take place on the MGT lay down area, which is outside of the USC Facility lease area and beyond 200' from any waterway. A containment area will be used during refueling.

Steel, new coating material, equipment and other materials for the MGT repair will be landed at Avalon or Two Harbors via barge and will be transported to the jobsite via existing roadways.

Major Components of MGT Workscope:

Once the salt water pumps are installed and operational, draining of the MGT will commence. Due to the drought conditions, all MGT water will be used for drinking water or other project needs, such as the 10,000 gallons needed for coating removal. While the MGT is draining, equipment will be placed and piped to enable at least 100,000 gallons of drinking water and fresh water fire suppression capability. The last 30,000 gallons of tank water will be separated and tested to insure it is of drinking water quality. It will be either used for drinking water or disposed of. At this point the tank bottom sediment will be collected and placed in barrels for disposal. Approximately twenty 55 gallon drums will be needed for collection of sediment after the tank is drained.

The outer three foot radius of tank floor is planned for replacement based on known inspection results. After tank draining and interior coating removal, the tank floor will receive a non-destructive examination. Based on that examination, additional floor area may be replaced up to and including complete floor replacement. Additional tank floor steel will be on hold status from within California suppliers and will be shipped to the job site, if needed, while the existing floor is being removed and on hand steel is being used to begin the full floor replacement. After floor repair, the tank will be hydrostatically tested.

The existing MGT interior liner will be removed. A new tank liner will be installed. The removed liner will be stored in approximately thirty five on site 55 gallon drums while being characterized for final disposal. Coating removal, surface preparation, new coating application and waste disposal will all be within an approved EPA plan.

After coating application and cure, the tank will be partially filled for hydrostatic testing to meet code requirements. The hydrostatic test will be followed by continuation of tank fill and testing to drinking water standards. Once the tank has been proven to be of drinking water standards and has reached the 900,000 gallon level, it will be placed back into service.

After the tank is placed back into service, all equipment and materials used for the MGT Project will be removed, including all waste products, mobile and stationary equipment and tools.

Additional Components of MGT Workscope:

The MGT roof is sloped and can be difficult to walk on. Several tank modifications will be completed to enhance personnel safety and meet current code requirements. The ladder from the ground to the roof is now one continuous ladder. It will be replaced with two half-length ladders, which will be offset to one another with an adjoining platform midway up the tank. This design reduces fall distances and allows for a rest position while ascending the ladder. Personnel fall protection will be added to the exterior roof of the MGT. The fall protection will consist of adding a small hand rail along a portion of the tank roof at the existing ground to roof access ladder location and adding a platform on the roof for standing next to the access hatch. This will allow entering and exiting the tank through the roof access hatch from a flat surface. The access hatch will also be increased in size to meet current code requirements and an internal access ladder will be added to enhance personnel safety during entry and egress for internal inspection.

The existing MGT access hatch at the ground elevation will be increased in size and a second access hatch will be added 180 degrees apart from the existing hatch, to meet current code requirements.

Additional Workscope for Water Pipeline Repair and Maintenance

Although separate from the repair work associated with the MGT, SCE will also be performing repair and maintenance activities to replace a short section of piping. This section of piping is approximately 380 feet in length and is the above ground portion of piping that carries fire suppression and drinking water from the MGT to the USC Facility. The piping will be replaced following the same routing and having supports in the same locations as currently exists. Since initial installation in 1967, the existing pipe supports have incurred significant soil erosion and the pipeline itself has incurred numerous repairs and areas of corrosion. Some of the preparation needed for the MGT repair, namely the installation of a salt water system to supply fire suppression, is also needed while the pipeline is out of service for replacement. The extent of issues along the above ground portion of this pipeline causes the need for the pipeline to be replaced. Performing these needed repairs while the salt water pumps are already installed is more efficient, and ensures limited disruption to the USC Facility and surrounding environment.

3.0 Project Schedule and Manpower

3.1 Schedule

The estimated start dates for each work activity are provided below.

1. Install Salt Water Pumps	January, 2015
2. Install Temporary Tanks	January, 2015
3. Drain MGT	January, 2015
4. Repair MGT-Partial/Full Floor Replace	February – June/July, 2015
5. Refill MGT	July-Sept, 2015
6. Remove Salt Water Pumps	September, 2015

The above dates may change and are subject to:

- Amount of MGT floor requiring replacement. ¼ of floor replacement is currently planned and extent of replacement will be determined after MGT drainage, removal of current coating and completion of NDE inspection
- Weather and condition of roads for safe operations and application of new coating material

3.2 Manpower

All construction activities will be performed by an SCE approved contractor.

Crews will work as needed to complete tasks effectively and will generally work a four day work week and ten hours a day. Weekend work is not planned but will be worked to maintain schedule.

Crews will be housed at Two Harbors within USC housing, if available. Local housing will reduce travel on unimproved roads and reduce hazards to the crews and public. This housing should be available except for the busy summer months of August and September.