

**Japan Earthquake  
Impacts on Utility Supply Chains  
North America and PG&E  
April 1, 2011**

**North America**

The March 11<sup>th</sup> Japanese earthquake and tsunami caused many Japanese firms to halt production at certain facilities, whether directly due to damage or indirectly due to a loss of power through the regional electrical grid. Key ports throughout Northern Japan remain closed causing supply disruptions to the West Coast of the United States and Canada, and also to key export markets in China and South Korea.

Supply disruptions to US utilities are for the moment limited in comparison to those experienced by other vertical markets. Only about 2% of sourceable utility spend is tied directly to Japanese manufacturing facilities physically located in Japan. The semiconductor, flash memory, automobile and aerospace industries on the other hand all rely more heavily upon Japanese firms resulting in more direct impacts to their operations. Contrary to the semiconductor industry, for example, the utility industry tends to purchase relatively interchangeable components from Japanese manufacturers meaning products such as transformers, motors, switchgear, and other electrical components may be procured from alternative suppliers around the globe.

**PG&E**

The majority of PG&E's suppliers source very few components from Japan and expect no significant interruption in supply or extension of lead-times for components. Similarly, very little of our suppliers' business is derived from Japanese customers so no significant additional load on their resources is expected as rebuilding gets underway.

The Supply Chain organization has conducted a review of several product categories where we wanted to validate these assertions. The following summarizes our findings:

**Electrical Power & Distribution Transformers and Miscellaneous Electrical Distribution Equipment:** We do not expect disruptions in raw material or component supply or significant increases in demand to occur.

**Modular Protection Automation and Control (MPAC) Buildings:** PG&E requirements for the near term are met. Future requirements (2012 and beyond) will be addressed through a current Request for Proposal (RFP) initiative.

**Wire and Cable:** No significant near term impacts are expected aside from the effect that a reaction to perceived shortages may have on raw material commodity prices.

**Gas Pipe, Valves and Fittings (PVF):** Only a small percentage of PG&E's PVF requirements originate from Japan. However, with nearly 10% of steel production originating from Japan, any disruption in this output could affect pricing and lead time for PVF product in other parts of the world. Sufficient inventories are on hand to meet current demand forecasts for this year. Supply Chain will continue to monitor this category.

**Tubular Steel Poles and Fabricated Structures:** None of PG&E's requirements for this commodity are sourced through Japanese manufacturers. However, pricing and availability will be monitored to ensure our needs are met should there be any increases in local Japanese demand. Supply Chain is working with suppliers to reserve 2011 capacity.

**Fleet Vehicles:** Some vehicles and components are sourced from Japanese manufacturers however, given our current purchase plan, no immediate impacts are expected.

**Meters:** Landis+Gyr (L+G) reports a limited number of components are sourced directly from Japan but that alternate sources of supply are available. Japan provides approximately 60% of the World's silicon used to fabricate semiconductor chips and L+G is monitoring output. Some components for Silver Springs Networks' (SSN) Network Interface Card are sourced from Japan however no immediate disruptions are expected. Supply Chain will continue to monitor this category.

**IT / Hardware:** Hitachi reports no major damage to its facilities and PG&E does not plan on purchasing any additional Hitachi storage until Q3 2011. Other IT hardware requirements have been met for Q1 and Q2 through a recent 'advance buy' strategy. Supply Chain is focusing on sourcing for Q3 and beyond to mitigate any potential disruptions in supply.

**Photovoltaic (PV) Modules:** Japan produces 10% of global solar PV module requirements and its output may be constrained by the current situation. However PG&E's needs for PV modules are secured for the coming year - our Program Year 1 suppliers, Cupertino and Solan, source primarily from China for their panel components and manufacturing. Future requirements will be addressed through the current Program Year 2 RFP initiative.

**Diablo Canyon Power Plant:** No supply disruptions are anticipated. Sufficient inventories are on hand to support maintenance and repair of both Hitachi and Toshiba products. Supply Chain continues to review this category with suppliers.

In closing, the Supply Chain organization is in frequent and continuous contact with all PG&E's key suppliers, monitoring lead times and assuring uninterrupted supply of product. If conditions change and/or we foresee supply issues we will provide additional updates.

If you have any questions on the above, please contact either Gun Shim (Senior Director Supply Chain) or myself.

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