Purpose of Meeting

- Notify public of estimated health risks in 2015
- Background about Glendale Water & Power
- About Health Risk Assessments
- Steps taken to reduce the health risks
- Estimated health risks today
- Public input and comments
**Who we are**

- The South Coast AQMD is the regional agency responsible for air quality for areas in LA, Orange, Riverside and SB Counties
  - Largest of the 35 local air agencies in CA
  - Work with CARB and EPA to meet state and federal standards

**Responsibilities**
- Control emissions from stationary sources (e.g., power plants)
- Comply with U.S. government air quality standards
- Permit and inspect 28,400 affected businesses
- Administer $100 million of incentive funding annually
South Coast AQMD’s Air Toxics Program

- Over 25 rules to reduce toxic air contaminants
- Community meetings and direct public communication 1-800-CUT SMOG
- All new and modified sources are evaluated for toxics during permitting (Rules 1401 and 1401.1)
- Requires Health Risk Assessments, Risk Reduction Plans, and Public Notification
- Ambient monitoring near facilities and community monitoring
- Ensures facilities are complying with Toxic Rules
- Measures regional toxic air contaminants throughout air basin
The Air Toxics “Hot Spots” Information & Assessment Act (AB 2588)

- State law enacted in 1987 (Connelly)
- Public **Right-to-Know** Program

**Purpose**
- Collect emissions data with updates every 4 years
- Identify facilities having localized impacts
- Evaluate potential health risks through Health Risk Assessments
- Notify residents of those potential health risks
- Reduce health risks below certain thresholds

**Rule 1402**
- Implements requirements of AB 2588
- More stringent requirements for reducing health risk
Glendale Water & Power – Grayson Power Plant

- Located at 800 Air Way in the city of Glendale
- Provides electrical power to the City of Glendale
- In operation since 1941
- HRA required based on 2015 emissions
Operations at Glendale Water & Power

**Boilers**
Three dual-fuel boilers capable of combustign both landfill gas and natural gas.

Source of dioxins, furans, and metals emissions

**Simple Cycle Gas Turbine**
One simple cycle gas turbine combusting natural gas.

Source of naphthalene, polycyclic aromatic hydrocarbons (PAHs), and formaldehyde

**Combined Cycle Gas Turbines**
Three combined cycle gas turbines combusting natural gas.

Source of naphthalene, PAHs, and formaldehyde
About Health Risk Assessments

Estimates the chance that a person may experience a health effect from toxic air contaminant emissions

“Snapshot” based on toxic air contaminant emissions from one year of operation
Assumes 2015 emissions levels for 30 years

Snapshot can change if toxic air contaminant emissions are reduced

Conservative assumptions - people are outdoors 24 hours, 7 days a week in one location
3 Key Health Risk Elements of Rule 1402

**Cancer Risk**
- Estimates the increased probability for cancer
- Expressed in “Chances in a million”

**Non-Cancer Risk**
- Estimates non-cancer health effects
- Acute non-cancer effects are from short-term exposure
- Chronic non-cancer effects are from long-term exposure
- Expressed using a Hazard Index (HI)

**Cancer Burden**
- Estimates the increase in the occurrence of cancer cases in a population subject to a cancer risk of 1 in a million or greater
- Cancer burden > 0.5 requires risk reduction
## Health Effects of Key Toxic Air Pollutants

<table>
<thead>
<tr>
<th>Toxic Air Pollutant</th>
<th>Exposure</th>
<th>Health Effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dioxins and Furans</td>
<td>Long-term</td>
<td>Cancer and non-cancer effects on the human reproductive, respiratory, endocrine, and blood systems</td>
</tr>
<tr>
<td>Hexavalent Chromium</td>
<td>Long-term</td>
<td>Increases the chance of developing cancer, e.g. lung cancer</td>
</tr>
<tr>
<td>Arsenic</td>
<td>Long-term</td>
<td>Non-cancer effects on the human cardiovascular, nervous, reproductive, respiratory, and skin systems</td>
</tr>
<tr>
<td>Nickel</td>
<td>Long-term</td>
<td>Non-cancer effects on the human respiratory, blood, and immune systems</td>
</tr>
</tbody>
</table>
Rule 1402 Health Risk Thresholds

### Cancer Risk Thresholds
- **Risk Reduction**: Cancer Risk $> 25$ in one million
- **Public Notification**: Cancer Risk $> 10$ in one million

### Non-Cancer Risk Thresholds
- **Risk Reduction**: Non-Cancer HI $> 3$
- **Public Notification**: Non-Cancer HI $> 1$

### Cancer Burden Threshold
- **Risk Reduction**: Cancer Burden $> 0.5$
Rule 1402 Risk Reduction Plans

Risk Reduction Plan – Required if Risk > Risk Reduction Threshold

• Permanent, verifiable and enforceable risk reduction measures
• Must be implemented within 2½ years from the approval of plan or sooner
• Must reduce the facility-wide health risk below 25 in-a-million for cancer risk and a Hazard Index of 3 for non-cancer health effects
Grayson Power Plant Approved & Alternate HRAs

Approved HRA
• Uses 2015 emissions data
• Uses a default factor to estimate emissions from burning landfill gas
• This factor likely overestimated emissions of dioxins & furans
• The resulting estimated risk levels are likely higher than the actual risk levels in 2015

Alternate HRA
• Uses 2015 emissions data
• Uses an emissions factor developed from a 2018 source test
• This factor is likely a better estimate of dioxin & furan emissions provided the landfill gas produced in 2018 is similar to that in 2015

The Approved HRA remains the official HRA; the Alternate HRA will not be reviewed for approval but validated information may still be used in the risk reduction plan
Estimated Cancer Risk – 2015 Approved HRA and 2019 Alternate HRA

- 2015 Approved HRA cancer risk is well above risk reduction threshold
  - Dioxins, furans, and metals from landfill gas combustion represent 97% of the cancer risk
- 2019 Alternate HRA risk is slightly above risk reduction threshold
  - Metals represent 85% of the cancer risk
• 2015 Approved HRA cancer burden is well above the Risk Reduction Threshold
• 2019 Alternate HRA cancer burden is below the Risk Reduction Threshold
• The 2019 Alternate HRA will not be reviewed for approval but validated information may still be used in the risk reduction plan
Estimated Non-Cancer Risk – 2015 Approved HRA and 2019 Alternate HRA

- 2015 Approved HRA long-term chronic health risk is below the Risk Reduction Threshold
  - Dioxins, furans, and metals from landfill gas combustion represent 99% of the long-term chronic health risk

- 2019 Alternate HRA long-term chronic health risk is below the Risk Reduction Threshold
  - Metals represent 98% of the long-term chronic risk
Next Steps

**Risk Reduction Plan**
Glendale Water & Power submits a Risk Reduction Plan

**RRP Review**
South Coast AQMD reviews & approves the Risk Reduction Plan

**Plan Implementation**
Risk Reduction Plan will be implemented as soon as feasible but no later than 2 ½ years
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