



# APPLICATION FACT SHEET



**Johnson Matthey**  
Catalysts

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## Case No. 502: SCRT® Installed on 2900 HP Cummins Diesel Engine to Generate Power for Snow Making Equipment in California

Snow Summit Ski Resort of Big Bear Lake, California had a unique requirement to control PM, NOx, CO and VOC emissions from their Cummins QSK60-G6 engine. They chose Johnson Matthey’s SCRT®, which contains a patented CRT® filter system and a urea injection SCR catalyst system.

**PM Limit 0.045 g/Bhp-hr.....Achieved 98% Reduction**  
**NOx Limit 0.47 g/Bhp-hr.....Achieved 94.6% Reduction**  
**CO Limit 0.20 g/Bhp-hr.....Achieved 96% Reduction**  
**VOC Limit 0.05 g/Bhp-hr.....Achieved 92% Reduction**  
**Ammonia Slip.....Achieved < 10 ppm**  
**(All limit requirements were exceeded)**

### Background

During ski season, Snow Summit Ski Resort must operate their Cummins QSK60-G6 engine almost continuously to generate power for their remote site. This power is used to operate snow making and other auxiliary equipment. To meet the SCAQMD stringent air emissions limits, Snow Summit contacted their local Cummins distributor, who in turn contacted Johnson Matthey.

Since high level reductions of PM, NOx, CO and VOC was required, Johnson Matthey proposed their SCRT system, comprising a patented CRT system and a urea SCR system. The CRT incorporates an active oxidation catalyst plus particulate filter and the urea SCR system includes a urea injection module, SCR catalytic converter and electronic controls. The SCRT has been operating more than 2000 hours meeting or exceeding the SCAQMD limits.

### Summary

- **Product:** SCRT® system
- **Application:** Cummins QSK60-G6 2900 HP diesel engine
- **Customer:** Snow Summit Ski Resort
- **Location:** Big Bear Lake, CA
- **Installed By:** Snow Summit
- **Date Installed:** September 2003
- **Operation:** Seasonal Support (1200 hours/year)
- **Pollutants:** PM, NOx, CO, VOC and NH<sub>3</sub>
- **Comments:** Snow Summit buying the Cummins engine and equipping it with a JM SCRT emissions control system was a very cost effective solution. Now they can generate snow cleanly from November through April.

Cummins QSK60-G6 diesel engine with CRT filter converter (top). Urea injector, electronic controls (not shown) and SCR catalytic converter (bottom).

