

## **CHAPTER 4**

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# **POTENTIAL ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES**

**Introduction**

**Air Quality**

**Energy Resources**

**Hazards**

**Public Services**

**Environmental Topics Found Not To Be Significant**

**Irreversible Environmental Changes**

**Growth-Inducing Impacts**

**Consistency**

## **INTRODUCTION**

CEQA requires environmental documents to identify significant environmental effects that may result from a proposed project (CEQA Guidelines §15126(a)). Direct and indirect significant effects of a project on the environment should be identified and described, with consideration given to both short- and long-term impacts. The discussion of environmental impacts may include, but is not limited to, the resources involved; physical changes; alterations of ecological systems; health and safety problems caused by physical changes; and other aspects of the resource base including, for example, water, scenic quality, and public services. If significant environmental impacts are identified, CEQA requires a discussion of measures that could either avoid or substantially reduce any adverse environmental impacts to the greatest extent feasible (CEQA Guidelines §15126(c)).

The CEQA Guidelines indicate that the degree of specificity required in a CEQA document depends on the type of project being proposed (CEQA Guidelines §15146). The detail of the environmental analysis for certain types of projects cannot be as great as for others. For example, the environmental document for projects, such as the adoption or amendment of a comprehensive zoning ordinance or a local general plan, should focus on the secondary effects that can be expected to follow from the adoption or amendment, but the analysis need not be as detailed as the analysis of the specific construction projects that might follow.

CEQA (Public Resources Code, §21000 et seq.) and the CEQA Guidelines as promulgated by the State of California Secretary of Resources establish the categories of environmental impacts to be studied in a CEQA document. Under the CEQA Guidelines, there are approximately 15 environmental categories in which potential adverse impacts from a project are evaluated. Projects are evaluated against the environmental categories in an environmental checklist and those environmental categories that may be adversely affected by the project are further analyzed in the appropriate CEQA document.

Pursuant to CEQA, an Initial Study, including an environmental checklist, was prepared for this project (see Appendix B). Of the 15 potential environmental impact categories, three (air quality, energy resources, and hazards) were identified as being potentially adversely affected by the proposed project. Additionally, a comment letter received on the Initial Study recommended analyzing public service impacts.

It should be noted that for the three environmental impact areas that were identified as potentially significant in the Initial Study and are further evaluated in detail here, the environmental impact analysis for each environmental topic incorporates a “worst-case” approach. This entails the premise that whenever the analysis requires that assumptions be made, those assumptions that result in the greatest adverse impacts are typically chosen. This method ensures that all potential effects of the proposed project are documented for the decision-makers and the public.

Accordingly, the following analyses use a conservative “worst-case” approach for analyzing the potentially significant adverse environmental impacts associated with the implementation of the proposed project.

## AIR QUALITY

The Initial Study identified three air quality issues relative to the existing setting that would be addressed in this Draft EA: 1) the potential delay in achieving anticipated emission reductions; 2) the potential of achieving less emission reductions than anticipated; or 3) the potential for adverse localized effects due to an increased use of MSERCs and ASCs by stationary sources.

This Draft EA also evaluates the construction-related emissions associated with the installing additional control equipment, primarily SCR, and MSERC projects (i.e., constructing alternative fuel refueling stations). It should be noted that the EA prepared for the NO<sub>x</sub> and SO<sub>x</sub> RECLAIM program prior to its adoption in 1993 included an analysis of potential adverse environmental impacts from SCR equipment. In that analysis, it was assumed that all NO<sub>x</sub> emission reductions would occur through the installation of SCR.

PR 2009 would require installation of BARCT on all power generating units, except peaker turbines, by January 1, 2003. BARCT is required on peaker turbines by January 1, 2004. BARCT for this analysis is assumed to be SCR. Since the proposed amendments require BARCT on all power generating units, regardless of whether or not they achieve their ending allocations with other types of control equipment, the proposed amendments to the RECLAIM program could result in greater use of SCR equipment than analyzed in the original RECLAIM EA. For this reason, the impacts of using SCR have been analyzed in this EA.

### Significance Criteria

The proposed project will be considered to have significant adverse air quality impacts if any one of the thresholds in Table 4-1 are equaled or exceeded.

**Table 4-1**  
**SCAQMD Air Quality Significance Thresholds**

Mass Daily Thresholds		
Pollutant	Construction	Operation
NO <sub>x</sub>	100 lbs/day	55 lbs/day
VOC	75 lbs/day	55 lbs/day
PM10	150 lbs/day	150 lbs/day
SO <sub>x</sub>	150 lbs/day	150 lbs/day
CO	550 lbs/day	550 lbs/day

**Table 4-1**  
**SCAQMD Air Quality Significance Thresholds**  
 (continued)

Change in Concentration Thresholds	
NO <sub>2</sub> 1-hour average annual average	500 ug/m <sup>3</sup> = .25 ppm 100 ug/m <sup>3</sup> = .053 ppm
PM10 24-hour average annual geometric average	2.5 ug/m <sup>3</sup> 1.0 ug/m <sup>3</sup>
Sulfate 24-hour average	25 ug/m <sup>3</sup>
CO 1-hour average 8-hour average	1.1 mg/m <sup>3</sup> = 1.0 ppm 050 mg/m <sup>3</sup> = .45 ppm

ug/m<sup>3</sup> = microgram per cubic meter; pphm = parts per million; mg/m<sup>3</sup> = milligram per cubic meter

## Analysis of Construction Air Quality Impacts

**PROJECT-SPECIFIC IMPACTS:** Control equipment that may be installed as a result of the proposed compliance plan requirement includes SCR, low NO<sub>x</sub> burners, and other devices. Of the differing control equipment likely to be installed, SCR installation is anticipated to result in the greatest construction emissions. In addition to modifications to or replacement of the combustion source typical of other NO<sub>x</sub> control technologies, SCR systems may also require the installation of one or more ammonia storage tanks.

Except for PR 1632, there are assumed to be minimal construction-related emissions associated with the mobile and area source credit generation protocols being analyzed herein as part of the proposed project. PR 1631 involves the replacement of existing diesel engines on marine vessels with new engines that meet specified emission standards and no construction-related emissions, such as site preparation, etc., are expected. PR 1633 involves the electrification of truck/trailer refrigeration units at distribution centers. It is assumed that the distribution centers have sufficient electrical capacity; thus, the generation of credits under the proposed rule would merely require the installation of outlets and associated meters to which the refrigeration units would be plugged into. Minimal construction-related emissions would be expected from the installation of outlets and associated meters. PR 2507 involves the replacement of diesel agricultural pumps with electric motors. Minimal construction-related emissions would be expected to occur from this replacement because this is a simple matter of removing the diesel engine and replacing it with an electric motor.

There are anticipated to be modest construction emissions associated with PR 1632. As discussed in Chapter 2, PR 1632 sets forth the protocol to generate NO<sub>x</sub> credits from the voluntary use of fuel cell technology to provide power for a ship's hotelling requirements (e.g., lights, ventilation, loading, offloading, etc.). The fuel for the fuel cell is anticipated to be natural gas. Consequently, storage tanks would have to be installed in the harbor to accommodate the system(s). It is assumed for the purposes of this analysis that the installation of natural gas tanks,

connected to the distributed natural gas system in the harbor, would result in emissions similar to that of installing an SCR system. Thus, the following discussion of construction emissions associated with installation of an SCR is considered representative of that for installation of natural gas tanks for fuel cell technology in the harbor because installing a natural gas system is likely to require installation of storage tanks, ancillary piping, and associated equipment such as pumps and compressors.

The following analysis is taken from the Draft EIR for a proposed SCR installation project consisting of the installation of three 20,000-gallon aboveground ammonia storage tanks and four SCR reactor units within four existing boilers (SCAQMD, 2001c). The SCR installation that is the subject of that EIR is a large system that is a representative “worst-case” SCR system that could be installed at a RECLAIM facility pursuant to the proposed amendments.

The site preparation and construction necessary for SCR installation is primarily associated with placing and securing above-ground ammonia storage tanks onsite and assembling the SCR systems<sup>1</sup>. This would primarily involve light-duty construction equipment and structural lifting equipment. Table 4-2 shows a list of the typical construction equipment to be used on site during SCR installation and criteria pollutant emissions associated with this activity.

The estimated emissions are “worst-case” in that they assume that all of the construction equipment operates concurrently which is not typically the case. In reality, although some equipment would operate concurrently, not all of the equipment can operate simultaneously but would operate sequentially. For example, the machinery involved in the demolition and removal of existing equipment during site preparation would be used before the crane and other structural machinery is used to install the SCR housing. This means that the emission levels calculated for the project construction phase are a conservative overestimate of the impacts that are likely to occur. The calculation methodology used to estimate emissions is contained in full in Appendix D.

As shown in Table 4-2, the total emissions of NO<sub>x</sub> for a project at a single representative facility are below the significance thresholds for all pollutants. The NO<sub>x</sub> significance threshold of 100 pounds per day is approached but not exceeded and, due to the stepwise manner in which construction will take place, even the NO<sub>x</sub> emission level presented here is unlikely to be reached. The calculated emissions for CO, VOC, SO<sub>x</sub> and PM<sub>10</sub> associated with the proposed project do not approach the significance thresholds for these pollutants.

As discussed throughout the preceding analysis, numerous “worst-case” assumptions were made in calculating the construction emissions associated with the installation of control equipment. If it were also assumed that more than one construction project occurs on the same day, the potential air quality emissions from the construction activities would exceed the SCAQMD’s daily significance criteria for NO<sub>x</sub>.

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<sup>1</sup> Some facilities installing new SCR systems utilize existing on-site ammonia storage tanks. At such a facility, a new SCR unit would not require additional storage, but would require a greater number of ammonia deliveries.

**Table 4-2**  
**Estimated Construction Emissions**  
 (pounds per day)

Equipment	Total Pollutant Emissions				
	CO	VOC	NO <sub>x</sub>	SO <sub>x</sub>	PM <sub>10</sub>
Crane, 350 horsepower	15.75	5.25	40.25	3.5	2.63
Fork Lift, 15 ton	3.78	1.11	9.26	0.00	0.65
Backhoe or Bobcat	11.25	2.25	16.5	1.5	0.75
Pickup	7.2	1.44	10.56	0.0	0.48
Wackers	0.45	0.09	1.08	0.09	0.05
Welders	5.39	0.98	8.82	0.98	0.49
Gasoline vehicles (worker commute <sup>b</sup> )	10.8	16.2	3.6	0	0.8
<b>Total<sup>a</sup></b>	<b>55</b>	<b>27</b>	<b>90</b>	<b>6</b>	<b>6</b>

SCAQMD CEQA Air Quality Handbook, 1993 (Tables A9-8-A & A9-8-B)

<sup>a</sup> Values represent construction emissions from one representative SCR system installation for a stationary combustion source **or** one natural gas storage tank system under PR 1632. It is conceivable that more than one system may be installed on a given day.

<sup>b</sup> Worst case maximum miles per day is 1,200 (i.e. a round trip commute for a maximum of 40 workers)

Because of the schedule in PR 2009 mandating installation of BARCT (assumed to be SCR), this analysis assumes two or more SCR systems may be under construction at any one time<sup>2</sup>. Similarly, PR 1632 projects could also be under construction concurrently with SCR installation projects. For these reasons, construction air quality impacts are considered significant for VOC and NO<sub>x</sub>.

**MITIGATION MEASURES:** Table 4-3 lists mitigation measures for each emission source and identifies the estimated control efficiency of each mitigation measure. As shown in the table, no feasible mitigation measures have been identified for the emissions from on-road (off-site) vehicle trips. Additionally, no other feasible mitigation measures have been identified to further reduce construction emissions for which mitigation measures have been identified<sup>3</sup>.

<sup>2</sup> This is a conservative assumption considering the number of SCR applications already received by the SCAQMD irrespective of the proposed project.

<sup>3</sup> CEQA Guidelines § 15364 defines feasible as ‘... capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, legal, social, and technological factors’.

**Table 4-3**  
**Construction Related Mitigation Measures and Control Efficiency**

Mitigation Measure	Mitigation	Source	Pollutant(s)	Control Efficiency <sup>a</sup> (%)
AQ-1	Utilize existing power poles rather than temporary internal combustion engine power generators	Construction Equipment Exhaust	CO VOC NO <sub>x</sub> SO <sub>x</sub> PM <sub>10</sub>	5 5 5 5 5
AQ-2	Use low sulfur fuel for stationary construction equipment.	Construction Equipment Exhaust	CO VOC NO <sub>x</sub> SO <sub>x</sub> PM <sub>10</sub>	N/A N/A N/A 5 or greater N/A
AQ-3	Maintain construction equipment engines by keeping them properly tuned	Construction Equipment Exhaust	CO VOC NO <sub>x</sub> SO <sub>x</sub> PM <sub>10</sub>	5 5 5 5 5
AQ-4	Minimize vehicle idling time, where applicable	Construction Equipment Exhaust	CO VOC NO <sub>x</sub> SO <sub>x</sub> PM <sub>10</sub>	5 5 5 5 5
	No feasible measures identified <sup>b</sup>	On road motor vehicles	CO VOC NO <sub>x</sub> PM <sub>10</sub>	N/A N/A N/A N/A

<sup>a</sup> The control efficiency of each mitigation option was conservatively estimated to approximate a 'worst case scenario.'

<sup>b</sup> Health and Safety Code § 40929 prohibits air districts and other public agencies from requiring an employee trip reduction program making such mitigation infeasible. No feasible measures have been identified to reduce emissions from this source.

**REMAINING IMPACTS:** If it is assumed that two or more projects were to occur on a given day, the mitigation measures set forth for potential construction-related air quality impacts do not reduce emissions below the SCAQMD's daily emission thresholds (Table 4-4). As "worst-case" assumption, it is assumed that construction of more than two projects could occur on a given day and thus, potential air quality impacts associated with construction are considered significant for VOC and NO<sub>x</sub>.

**Table 4-4**  
**Construction Related Emissions Post-Mitigation**  
(pounds per day)

<b>Pollutant Emissions</b>
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<b>Emission Source / Mitigation Measure</b>	<b>CO</b>	<b>VOC</b>	<b>NOx</b>	<b>SOx</b>	<b>PM10</b>
On-site Power Generation Emissions <sup>1</sup>	5.39	0.98	8.82	0.98	0.49
Mitigation Measure A-1 Emission Reduction Efficiency	5%	5%	5%	5%	5%
Remaining On-site Power Generation Emissions	5.12	0.93	8.38	0.93	0.47
Offroad Construction Equipment Emissions <sup>2</sup>	38.43	9.82	77.58	5.02	4.71
Mitigation Measure A-2 Emission Reduction Efficiency	--	--	--	5%	--
Mitigation Measure A-3 Emission Reduction Efficiency	5%	5%	5%	5%	5%
Mitigation Measure A-4 Emission Reduction Efficiency	5%	5%	5%	5%	5%
Remaining Construction Equipment Emissions	34.59	8.84	69.82	4.27	4.24
<b>Total Emissions after Mitigation <sup>3</sup></b>	<b>51</b>	<b>26</b>	<b>82</b>	<b>5</b>	<b>6</b>

<sup>1</sup> Includes emissions from welding equipment

<sup>2</sup> Includes emissions from crane, forklift, backhoe, on-site pickups, and wackers

<sup>3</sup> Includes emissions from worker commute trips (no mitigation available)

Values represent construction emissions from one representative SCR system installation for a stationary combustion source or one natural gas storage tank system under PR 1632. It is conceivable that more than one system may be installed on a given day.

**CUMULATIVE IMPACTS:** As previously discussed, this Draft EA analyzes the cumulative impacts of recently adopted Rule 1612.1 as well as the proposed project. The potential adverse construction air quality impact associated with implementation of Rule 1612.1 as a result of the installation of alternative clean fuel refueling stations was previously analyzed in the Final EA for that rule (SCAQMD, 2001d). The results of the analysis of the construction of alternative clean fuel refueling stations from the Rule 1612.1 Final EA is reproduced in Table 4-5.<sup>4</sup> The

<sup>4</sup> Alternative clean fuel fueling stations are being installed throughout the district in increasing numbers for reasons unrelated to Rule 1612.1. It is possible that these alternative clean fuel fueling stations would be sufficient in number and available for use by vehicles taking advantage of Rule 1612.1. If such were the case, there would be no

reader is referred to Appendix D for the methodologies and assumptions used to calculate the construction emissions for Rule 1612.1.

**Table 4-5**  
**Cumulative Construction Emissions**  
(pounds per day)

Proposed Project	Total Pollutant Emissions				
	CO	VOC	NO <sub>x</sub>	SO <sub>x</sub>	PM <sub>10</sub>
Rule 1612.1	20	4	24	2	12
RECLAIM Amendments <sup>1</sup>	55	27	90	6	6
<b>Cumulative Total</b> <sup>2,3</sup>	<b>75</b>	<b>31</b>	<b>114</b>	<b>26</b>	<b>18</b>
Significance Threshold	550	75	100	150	150
<b>Significant?</b>	<b>No</b>	<b>No</b>	<b>YES</b>	<b>No</b>	<b>No</b>

<sup>1</sup> Values represent construction emissions from one representative SCR system installation for a stationary combustion source **or** one natural gas storage tank system under PR 1632. It is conceivable that more than one system may be installed on a given day.

<sup>2</sup> Values represent construction emissions from construction of one alternative fuel refueling station **plus** either one representative SCR system installation **or** one natural gas storage tank system under PR 1632. It is conceivable that additional construction projects could occur on a given day.

<sup>3</sup> Values do not account for emission reductions from mitigation. Considering footnotes 1 and 2, the measures set forth in Table 4-3 would not mitigate cumulative construction emission impacts to insignificance.

In addition to the proposed amendments to certain RECLAIM rules that are the subject of this Draft EA, staff is also independently developing amendments to Rule 2005 – New Source Review for RECLAIM for reasons unrelated to the objectives of the proposed projects<sup>5</sup>. The proposed amendments to Rule 2005 have been in development to recognize that air quality in several sub-regions of the district is in attainment for the state and federal ambient air quality standards. In those sub-regions, the modeling criteria used to detect potential localized air quality impact would be amended to provide for increases up to the ambient air quality standard (i.e., new emissions plus the measured background could not create a violation of the standard). In sub-regions that not in attainment, the modeling criteria will remain the same; the new emissions may not cause a significant increase in pollutant concentrations as defined in Rule

cumulative impacts associated with the construction of the stations. For the purpose of this analysis, however, it is assumed that any participants in Rule 1612.1 would construct and operate their own alternative fuel fueling stations.

<sup>5</sup> The amendments proposed to 2005 would also be reflected in Regulation XIII – New Source Review (specifically Rule 1303 – Requirements). The Draft Environmental Assessment for that project (SCAQMD, 2001g) is available at SCAQMD Headquarters, by calling the SCAQMD Public Information Center 1t (909) 396-2039, or by accessing <http://www.aqmd.gov/ceqa>. The proposed amendments to Rules 1303 and 2005 are scheduled to be heard by the Governing Board at its April 20, 2001, public hearing.

2005, Table A-2. The proposed amendments to 2005 have no construction-related air quality impacts.

Though short-term construction impacts will cease upon completion of construction activities associated with the proposed project and Rule 1612.1, the potential cumulative construction-related air quality impacts from these activities are considered significant.

**CUMULATIVE IMPACT MITIGATION:** The construction-related mitigation measures discussed above will serve as the cumulative impact mitigation. No additional feasible measures have been identified to minimize the short-term cumulative construction-related air quality impacts while still achieving the objectives of the proposed project.

### **Analysis of Operation-Related Air Quality Impacts**

The following analysis is divided into two sections. The first subsection analyzes the direct air quality effects of the proposed project relative to the existing setting. Specifically, the analysis considers what effect the proposed project would have on the projected supply and demand of RTCs relative to projections without project implementation in terms of NO<sub>x</sub> emission reductions forgone. The subsequent subsection analyzes the secondary effects of the proposed project, which include analyses of the potential for a delay in achieving anticipated emission reductions and the potential for adverse localized air quality impacts.

#### **Direct Air Quality Effect**

**PROJECT-SPECIFIC IMPACTS:** As discussed in Chapter 3, RTC demand by power-producing facilities greater than 50 MW is estimated to exceed supply through at least 2005 without implementation of the proposed project (see Table 3-1). This is because power-producing facilities have substantially increased emissions due to the unanticipated statewide energy crises and the resulting need to generate more in-Basin electricity. Accordingly, some of these facilities are projected to experience a shortfall in available RTCs to meet their annual allocations.

Table 4-6 presents a preliminary forecast of potential RTC demand and supply for power-producing facilities assuming implementation of the proposed project (as described by the methodologies in Appendix E). As can be seen in Table 4-6, the estimated shortfall of RTCs is diminished under the proposed project relative to the existing RECLAIM program assuming that California Governor's Executive Order D-24-01 is in effect. RTC demand would exceed supply only for Compliance Year 2001. The projected surplus of RTCs beginning in Compliance Year 2002 is a result of the requirement to add controls (PR 2009), the Mitigation Fee Program set forth in PAR 2004, and additional credits entering the RTC market through the proposed MSERC and ASC rules. By requiring power-producing facilities greater than or equal to 50 MW to install BARCT, the demand by these facilities for RTCs will be reduced because they would emit less than they would without this level of control. Also, because of the additional credits entering the RTC market through the proposed MSERC and ASC rules, combined with the Mitigation Fee Program for power-producing facilities, these facilities may be more likely to operate within their allocations. The more the proposed amendments assist power-producing facilities to operate within their allocations, the less the likelihood and extent of potential

emission reductions delayed or foregone. This is because power-producing facilities would be less likely to exceed their allocations and if they do, the reductions from allocations in subsequent years (pursuant to the administrative remedies in Rule 2010) would be reduced.

Assuming insufficient external credit supply (i.e., MSERCs/ASCs) and that emissions in excess of a facility's annual allocation (as represented in Table 4-6 by a positive RTC demand) are deducted from the facility's annual emissions allocations two years subsequent to the exceedance (pursuant to the administrative remedies in proposed amendments to Rule 2010), an RTC shortfall would occur. Under the assumptions given, approximately 6.5 tons per day of NOx reduction in 2001 would be delayed, resulting in non-compliance in 2003 and 2005. Nonetheless, the RECLAIM ending allocation of 2003 would be maintained. Furthermore, the estimated shortfall is substantially less than would occur under the emission reductions debt repayment scenario shown in Table 3-1 (i.e., without implementation of the proposed project).

Table 4-7 presents the estimated RTC demand and supply for the non-power-producing facilities in the RECLAIM universe. As presented in Table 4-7, there is an anticipated shortfall of RTCs for non-power producers. However, the shortfall of RTCs is diminished under the proposed project relative to the existing RECLAIM program. RTC supply is expected to exceed demand by Compliance Year 2002 under the proposed project as compared to 2003 for the existing setting. There are two primary reasons for the acceleration of RTC supply for non power-producing facilities under the proposed project. Additional credits are expected to enter the RTC market through the proposed MSERC and ASC rules. In addition, the isolation of the power-producing facilities from the remainder of the market will remove a significant purchaser of RTCs, thus leaving more RTCs in the market for the remaining facilities.

If insufficient credits are identified and facilities elect to violate RECLAIM provisions, however, then the administrative remedies provision of Rule 2010 would be applied (i.e., deduction of allocation exceedances from subsequent years RTC holdings). Under this scenario, there could be up to eight tons per day of NOx reductions delayed and programmatic compliance for this sector of the universe would not be achieved until 2005. Even under this scenario where facilities operate above their allocations, the shortfall in RTCs is reduced as compared to the existing setting where the RTC shortfall would be larger and would extend beyond 2005.

**Table 4-6**  
**Estimated RTC Demand and Supply for Power-producing Facilities ≥ 50 MW**  
**– Assuming Implementation of Proposed Project -**  
**(CEQA Air Quality Scenario)**  
 (tons per day)

RTC Demand and Supply		2001	2002	2003	2004	2005
Demand	Baseline NOx Emission Projections	19.63	19.58	20.24	20.86	21.39
	Emission Reductions from Current Retrofit Projects	5.12	10.99	10.98	10.96	11.29
Supply	CARB Emission Bank	1.17	1.74	1.74	--	--
	Utility Operator Offsets	--	--	--	1.74	1.74
	RTC Holdings	6.71	6.61	5.45	5.80	5.78
	Compliance Plan Emission Reductions	--	--	0.58	1.66	1.68
	Mitigation Fee Credits	0.06		1.52	--	1.50
	Surplus Credits from Reg. XVI/XXV Sources	0.03	0.24	0.76	0.70	0.75
<b>Estimated RTC Demand <sup>1</sup></b>		<b>6.54</b>	<b>0.00</b>	<b>-0.79</b>	<b>0.00</b>	<b>-1.35</b>
<p>Assuming that emissions in excess of a facility's annual allocation (as represented in Table 4-6 by a positive RTC demand [i.e., RTC shortfall]) are deducted from the facility's annual emissions allocations in the compliance year two years subsequent to the exceedance by the total amount the allocation was exceeded pursuant to the proposed amendments to Rule 2010, the estimated RTC shortfall for power-producing facilities would be:</p>						
<b>Estimated RTC Demand without Additional Reductions Assumed <sup>1, 2</sup></b>		<b>--</b>	<b>--</b>	<b>5.75</b>	<b>--</b>	<b>4.40</b>

<sup>1</sup> Positive number indicates RTC shortfall; negative number means RTC supply exceeds demand.

<sup>2</sup> The values in this row represent RTC demand without additional emission reductions accounting for exceedances of annual allocations.

The methodology for constructing this table is presented in Appendix E.

**Table 4-7**  
**Estimated RTC Demand and Supply for RECLAIM Universe**  
**Other than Power-producing Facilities ≥ 50 MW**  
**– Assuming Implementation of Proposed Project -**  
**(CEQA Air Quality Scenario)**  
(tons per day)

Estimated RTC Demand and Supply		2001	2002	2003	2004	2005
<b>Demand</b>	Baseline NOx Emission Projections	44.17	43.95	44.62	44.92	45.23
	<p>Assuming that emissions in excess of a facility's annual allocation (as represented in Table 4-7 by a positive RTC demand [i.e., RTC shortfall]) are deducted from the facility's annual emissions allocations for the subsequent compliance year by the total amount the allocation was exceeded pursuant to Rule 2010(b)(A), the estimated RTC shortfall for non-power-producing facilities would be:</p>					
<b>Supply</b>	CARB Emission Bank	0.64	0.07	0.07	--	--
	Utility Operator Offsets	--	--	--	0.07	0.07
	Emission Reductions – Level 1	--	8.80	16.41	16.56	16.73
	Emission Reductions – Level 2	--	1.15	1.15	1.15	1.15
	RTC Holdings – RECLAIM Facilities	32.81	30.27	26.89	26.60	26.41
	RTC Holdings – non-RECLAIM Facilities	2.10	1.26	1.62	1.56	1.77
	AQIP Credits	0.59	0.58	0.96	0.98	1.01
	Surplus Credits from Reg. XVI/XXV Sources	0.03	1.98	0.76	2.32	0.75
<b>Estimated RTC Demand <sup>1</sup></b>		<b>8.00</b>	<b>- 0.16</b>	<b>- 3.24</b>	<b>- 4.32</b>	<b>- 2.66</b>
<b>Estimated RTC Demand should Violations Occur <sup>1,2</sup></b>		<b>--</b>	<b>7.84</b>	<b>4.60</b>	<b>0.28</b>	<b>- 2.38</b>

<sup>1</sup> Positive number indicates RTC shortfall; negative number means RTC supply exceeds demand.

<sup>2</sup> The values in this row represent RTC demand without additional emission reductions accounting for exceedances of annual allocations.

The methodology for constructing this table is presented in Appendix E.

Table 4-8 summarizes the potential RTC demand with and without implementation of the proposed project for the RECLAIM universe as a whole (i.e., power-producing facilities and non-power-producing facilities) through 2005. The anticipated shortfall of RTCs for the RECLAIM program, due in part to the unanticipated statewide energy crises, is diminished under the proposed project relative to the existing RECLAIM program assuming that California Governor's Executive Order D-24-01 is in effect.

**Table 4-8**  
**Estimated RTC Demand and Supply for Entire RECLAIM Universe**  
**Existing Setting vs. Proposed Project \***  
 (tons per day)

<b>EXISTING RECLAIM PROGRAM</b>					
	<b>2001</b>	<b>2002</b>	<b>2003</b>	<b>2004</b>	<b>2005</b>
Estimated Anticipated RTC Demand <sup>1</sup>	15.25	2.64	-0.47	0.30	-1.94
Estimated RTC Demand should Violations Occur	--	17.89	17.42	17.72	15.78
<b>PROPOSED PROJECT</b>					
Estimated RTC Demand	14.54	-0.16	-4.03	-4.32	-4.01
Estimated RTC Demand should Violations Occur	--	7.84	10.35	0.28	2.02

\* Assuming no cross-cycle trading, curtailment of operation, or additional MSERC generation beyond assumptions to allow non-compliance.

<sup>1</sup> positive number indicates RTC shortfall; negative number means RTC supply exceeds demand

Based on the preceding analysis, the proposed project is not expected to result in significant adverse direct air quality effects.

If we were to assume that power-producing facilities were to meet their 2001 allocations, then the proposed project would result in a significant adverse direct air quality impact relative to the existing RECLAIM program. This conclusion assumes that facilities under the existing RECLAIM program would cease operations to remain within their allocation. Under the proposed project, the facilities could continue operating under the Mitigation Fee Program proposal without being considered in violation. However, the SCAQMD is aware that some of these facilities may exceed their allocation and are likely to continue to emit due to the state requirements to continue to generate electricity and a federal court order requiring power to be made available. Thus, the assumption that all power-producing facilities would meet their 2001 allocations is erroneous. Therefore, the comparison of the proposed project to the projected emissions originally anticipated in the RECLAIM program is not applicable.

## Secondary Air Quality Effects

This section analyzes the secondary effects of the proposed project in two subsections. The first subsection considers whether the proposed project may cause a delay in achieving anticipated emission reductions. The second subsection analyzes the proposed project's potential for causing adverse localized air quality impacts.

### *Delayed Emission Reductions*

**PROJECT-SPECIFIC IMPACTS:** The following analysis considers whether the project would cause a delay in achieving anticipated emission reductions by either: 1) modifying the existing violation procedure for a power-producing facility greater than or equal to 50 MW that exceeds its annual allocation, or 2) altering the relative compliance costs of purchasing RTCs by increasing the amount of MSERCs and ASCs (converted to RTCs) entering the RECLAIM market versus installing control equipment.

### Power Plant Exceedances

Under the current RECLAIM program, a power-producing facility that exceeds its RTC holdings has the option of purchasing RTCs to account for exceedances. If the facility does not account for the exceedance with purchased RTCs during the reconciliation period, it is in violation of Rule 2010. Existing Rule 2010 requires that the emission exceedances be deducted from the subsequent compliance year by the total amount that a facility's annual emissions allocation is exceeded. Under the proposed amendments, owners or operators of a power-producing facility who believe the facility has or will exceed its annual allocation will have an option of paying a specified fee into the proposed mitigation fee program<sup>6</sup>. These facilities will not be allowed to purchase RTCs to comply with annual allocations. Because the emission allocations purchased through the Mitigation Fee Program must be offset by real emission reductions, any emission allocations that are not subsequently offset must be deducted from the facility's allocation. The exceedance would be deducted no later than two years subsequent to the exceedance<sup>7</sup>.

NOx emission reductions used in the Mitigation Fee Program will be designated for use in the compliance year(s) in which RTCs were deducted, replenishing the allocation closest to the current compliance year first. If the amount of emissions needed by the Mitigation Fee Program participants is greater than the amount of emission reductions available, the SCAQMD will refund only the amount not exceeding the actual reductions. If insufficient reductions are achieved, RTC refunds would be prorated based on fees paid.

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<sup>6</sup> If the facility fails to pay the appropriate amount into the mitigation fee program, then the facility is considered in violation and must comply with Rule 2010 and deduct exceedances from RTC holdings in the next compliance period.

<sup>7</sup> The proposed project was modified after the release of the Draft EA to allow one-quarter of the exceedance to be carried over for an additional year if 75 percent of the exceedance has already been mitigated (the ability to delay deductions through the Mitigation Fee Program would still sunset after Compliance Year 2003). Staff has reviewed the proposed modification and has determined that it is within the scope of the alternatives analysis and does not result in a significant adverse impact not previously identified nor make a previously identified significant impact substantially worse.

For example, if a facility exceeds its allocation by 100 pounds per day and pays into the Mitigation Fee Program for the exceedance, the 100 pounds will be deducted from the facility's RTCs holdings no later than two years subsequent to the exceedance. The SCAQMD will use the mitigation fee to fund NOx emissions reduction projects and return all or a portion of 100 pounds of emission reductions. In the event that the SCAQMD cannot generate enough emission reductions by the compliance year in which RTCs are deducted to return the entire 100 pounds, only a portion of the credits would be returned to the RTC holdings of the facility. The emission credits associated with the remaining portion of the exceedance would be removed from the facility's RTC holdings.

Unlike the current situation where a facility must deduct the amount of the exceedance from its annual allocation in the next compliance year after the exceedance is verified, the proposed amendments would allow exceedances by power-producing facilities that pay into the Mitigation Fee Program to be deducted up to two years after the exceedance is verified. Consequently, if one or more power-producing facilities exceed their annual allocations and the emissions purchased through the Mitigation Fee Program are not subsequently offset by real emission reductions, the proposed amendments may result in a one-year delay in the time with which the exceedance(s) would be accounted for. This is because the exceedance would be accounted for up to two years after it occurs as opposed to the current situation where it must be accounted for one year after occurrence. In such a case, emissions could be higher in the year subsequent to the exceedance year since the facility can emit at an unaltered level in the subsequent year without purchasing RTCs to offset the previous year's emission exceedance. Under the existing rule, the facility's allocation in the subsequent year would be reduced such that the facility could only emit at an unaltered level if the facility purchased additional RTCs.

The Mitigation Fee Program provision, which allows a one-year delay in deducting allocation exceedances, is a temporary program which sunsets after 2003. Therefore, the potential delay in deduction of exceedances would end in 2005. Further, access to the Mitigation Fee Program is limited to those facilities that do not sell RTCs in that compliance year and install control equipment as required by their SCAQMD approved compliance plan. Additionally, the proposed Compliance Plan requirement obligates all power-producing facilities greater or equal to 50 MW to install control equipment regardless of whether or not they would be in violation under the existing program. Any emission reductions obtained by installation of controls and through the Mitigation Fee Program would help counteract the excess emissions associated with the electricity crisis, which is not an option under the existing program.

If one or more facilities continually exceed their allocations over the next few years, or if one or more year's exceedance is substantially larger than the RTC holdings in the second compliance year and the SCAQMD is not able to secure sufficient emission reduction credits through the Mitigation Fee Program, it is possible that the facilities' RTC holdings would not be sufficient to account for the exceedance(s). As a result, it could take more than one year's worth of RTC holdings to account for previous exceedances.

In summary, since the proposed project would allow power-producing facilities that exceed their annual allocations to pay into a Mitigation Fee Program and deduct exceedances up to two years after the exceedance rather than in the next compliance year (as currently set forth by the penalty provisions in Rule 2010), the proposed amendments to RECLAIM may result in a delay in the

accounting for allocation exceedances. The Mitigation Fee Program, however, may provide a source of emission reductions that would not likely be available without implementation of the proposed project. Nevertheless, the potential delay in accounting for exceedances of annual allocations is considered significant.

Since the proposed project does not provide non-power-producing facilities the option of deducting potential exceedances two years subsequent to its occurrence, the proposal would not result in a delay of achieving emission reductions from these sources.

It should be noted that the assessment herein does not consider the air quality or emission benefit due to the displacement of diesel-powered back-up generators during the power supply shortage. Should the power-producing facilities elect to curtail their production to stay within their RTC allocations, emissions from back-up generators would likely exceed the one-year delay in emissions reductions.

#### Increased Supply of Non-Stationary Source Credits

Comments received on the Initial Study suggest that an increased supply of non-stationary source credit (i.e., MSERCs and ASCs) into the RECLAIM market would result in adverse air quality impacts. The contention is that such credits are not real or surplus and could artificially drive down RTC prices, thus delaying actual emission reductions through installation of control equipment, changing operations, or curtailing production.

As previously discussed, four rules are being proposed that set forth the protocols for the generation of NO<sub>x</sub> credits from mobile or area sources (Rule 1612.1 was adopted by the SCQMD Governing Board on March 16, 2001). As discussed in Chapter 2, these proposed rules are:

Rule 1612.1 – Mobile Source Credit Generation Pilot Program<sup>8</sup>

PR 1631 – Pilot Credit Generation Program for Marine Vessels

PR 1632 – Pilot Credit Generation Program for Hotelling Operations

PR 1633 – Pilot Credit Generation Program for Truck/Trailer Refrigeration Units

PR 2507 – Pilot Credit Generation Program for Agricultural Pumps

These protocols are being developed in concert with CARB and EPA to ensure that they will be federally approved. Federal approval is predicated on the assurance that credits generated according to these protocols are real, surplus, enforceable, and generated contemporaneously with use.

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<sup>8</sup> The potential adverse environmental impacts associated with the generation of credits under Rule 1612.1 are analyzed in the Final EA for that rule proposal. The potential adverse air quality impacts relative to the use of RTCs generated pursuant to Rule 1612.1, along with the use of RTCs generated pursuant to the other MSERC and ASC proposals are analyzed in this EA for the proposed amendments to RECLAIM. Additionally, the potential adverse environmental impacts of Rule 1612.1 are included as part of the cumulative impacts analyses in this EA.

Table 4-9 lists the amount of NO<sub>x</sub> credits (tons per year) estimated to be generated from the proposed credit rules listed above. The methodologies for these estimates are presented in Appendix E.

As described above, comments received on the Initial Study asserted that the new credit rules in combination with the RECLAIM AQIP and Mitigation Fee Program would increase the amount of credits in the RTC market, thus reducing RTC prices<sup>9</sup>. The implication is that since facilities would delay installing control equipment to comply with their allocations and instead use less expensive RTCs, emissions from these facilities would not be reduced. This assertion that the environment (i.e., air quality) is harmed is based on the commentator's assumption that RTCs generated from the proposed credit rules do not represent real emission reductions.

**Table 4-9**  
**Estimated NO<sub>x</sub> Credits Generated from Proposed Mobile and Area Source Credit Rules**  
(tons per year)

<b>Proposed Rule</b>	<b>2001</b>	<b>2002</b>	<b>2003</b>	<b>2004</b>	<b>2005</b>
Rule 1612.1	115	346	351	351	351
PR 1631	68	203	248	248	248
PR 1632	0	261	522	522	522
PR 1633	60	181	301	301	301
PR 2507	5	15	25	25	25
<b>TOTAL</b>	<b>248</b>	<b>1006</b>	<b>1447</b>	<b>1447</b>	<b>1447</b>

The SCAQMD has worked diligently with U.S. EPA, CARB, and representatives of the environmental community to develop protocols that ensure the validity of the MSERCs and ASCs intended to be used in the program. The credits generated by these protocols will be real, surplus, and enforceable emission reductions. Thus, the emission reductions obtained from mobile or area sources will have the same validity as those obtained from pollution control equipment at stationary sources. As such, it will not matter to ambient air quality whether the reductions are from stationary or mobile or area sources because any reductions from these sources will meet the same test of validity.

In fact, the discount factor imbedded in MSERC and ASC protocols result in an environmental benefit. Regional air quality will improve at a faster rate as a result of employing a greater

<sup>9</sup> It must be noted that one of the primary objectives of the proposed project is to lower RTC prices in the near-term. The reader is referred to Chapter 2 for a background discussion of the proposed project and a description of the project's objectives.

amount of MSERCs and ASCs. Therefore, there is no adverse air quality impact if the proposed project reduces the price of RTCs, as intended, and some facilities continue to use them instead of installing controls.

The use of RTCs by a stationary source as a means of compliance with Regulation XX, as opposed to installation of controls by the source, is one of the key components upon which the SIP-approved RECLAIM program was constructed. Likewise, the use of MSERCs in the RECLAIM credit market is also an inherent part of the program as adopted by the SCAQMD Governing Board in 1993. Thus, the ability of stationary sources to use RTCs for regulatory compliance is already set forth by the provisions of Regulation XX. Since the proposed project does not alter a stationary source's ability to use credits as a means of compliance with RECLAIM, its implementation would not alter the existing setting relative to this issue and, thus, would not be considered an impact under CEQA. Since there currently exists other SCAQMD rules that set forth provisions for the generation of RTCs from mobile and area sources, the absence of the proposed mobile and area source credit rules would not prevent a RECLAIM facility from using such credits as a means of compliance.

### ***Localized Effects***

**PROJECT-SPECIFIC IMPACTS:** Concerns were also raised in comments on the Initial Study that a RECLAIM facility can increase emissions by the use of RTCs as opposed to installing pollution control equipment. The concern centers on the potential for adverse localized NO<sub>2</sub> concentrations if a facility increases emissions by purchasing RTCs instead of installing controls. An associated concern is that MSERC projects used to generate RTCs may produce regional air quality benefits, but such RTCs used by a RECLAIM source do not produce emission reductions in the vicinity of the facility.

As discussed above, use of RTCs by a stationary source as a means of compliance with Regulation XX, as opposed to installation of control equipment, is one of the key components upon which the RECLAIM program was constructed. As further discussed, the use of MSERCs in the RECLAIM credit market is also an inherent part of the program. Since there currently exist other SCAQMD rules that set forth provisions for the generation of RTCs from mobile and area sources, the absence of the proposed mobile and area source credit rules would not prevent a RECLAIM facility from using such credits as a means of compliance. In fact, under the proposed project, the MSERCs/ASCs that enter the market will meet the U.S. EPA and CARB requirements of being real, surplus, enforceable and contemporaneous.

It is acknowledged, however, that increasing the amount of MSERCs and ASCs that enter the RECLAIM market could allow more stationary source facilities to temporarily forego reductions without installing pollution control equipment. There are numerous reasons, however, why an infusion of MSERCs and ASCs into the RECLAIM market is not expected to result in significant adverse localized impacts as discussed below.

In 1993 when RECLAIM was originally adopted, measured ambient NO<sub>2</sub> concentrations in the district were at or slightly below the one-hour state NO<sub>2</sub> ambient air quality standard of 0.25 parts per million. Even with high ambient NO<sub>2</sub> concentrations at that time, facilities emitting up to their initial allocations would not cause or contribute to a significant NO<sub>2</sub> localized air quality

impact. Since that time, actual emissions and ambient NO<sub>2</sub> concentrations have declined. Consequently, an exceedance of the state one-hour NO<sub>2</sub> standard would be more unlikely to occur now even if a facility were to increase emissions up to its initial allocation.

If a facility sought to purchase credits in order to increase emissions above its starting allocation plus non-tradeable credits, New Source Review for RECLAIM (Rule 2005) would ensure that such a scenario would not cause a localized exceedance of the NO<sub>2</sub> standard. Existing Rule 2005(c)(4) requires that a proposed increase in an annual RECLAIM allocation to a level greater than a facility's starting allocation plus non-tradeable credits not be approved unless the applicant demonstrates that each source which creates an emission increase will: 1) apply BACT, and 2) not result in a significant increase in the air quality concentration for NO<sub>2</sub> as specified in Rule 2005 Appendix A. Further, the facility must hold sufficient RECLAIM Trading Credits to offset the annual increase in the facility's starting allocation plus non-tradeable credits at a 1-to-1 ratio for a minimum of one year. The provisions of Rule 2005(c)(4) are not altered by the proposed amendments, thus ensuring that the use of purchased RTCs, whether from stationary or mobile sources, will not result in significant localized effects.

Further, it is the power-producing facilities that are the primary RECLAIM sources that are substantially increasing their emissions above historic levels. The proposed project prevents these facilities from purchasing RTCs to reconcile emission increases beyond RTC holdings and further requires them to install control equipment. It must also be noted that many of these facilities are currently in the process of installing SCR systems. Nine facilities are expected to have SCR installed in 2001. Another facility is proposing to install gas turbines with SCRs in 2002. Consequently, the facilities with the greatest emissions increases would be required under the proposed project to minimize their emissions by means of control equipment.

Regarding the concern that MSERC and ASC emission reduction projects result in regional benefits at the expense of local air quality, emission reductions from five of the seven sources subject to the proposed MSERC and ASC rules would be generated by sources that generally act as stationary sources. Rule 1612.1 would reduce emissions from diesel powered yard hostlers chiefly resulting in reduced emissions at the receptors adjacent to the yard. The large diesel emission sources targeted by the two marine vessel credit rules (i.e., PRs 1631 and 1632) greatly affect the receptors in the harbor area. PR 1633 would reduce emissions at distribution centers. The diesel powered agricultural pumps from which ASCs could be generated under PR 2507 are stationary.

Additionally, while NO<sub>x</sub> credits (at a nine to 10 percent discount) generated from these sources could be used by RECLAIM facilities, there would be concurrent reductions of particulate and toxic air contaminant emissions that are not eligible for credit.

Diesel exhaust is mainly composed of particulate matter and gases, which contain potential cancer-causing substances such as arsenic, benzene, formaldehyde, nickel, and polycyclic aromatic hydrocarbons (PAHs). The adverse health impacts associated with PM<sub>10</sub> emissions are well documented (see Chapter 3). Additionally, emissions from diesel engines currently include over 40 substances that are listed by EPA as hazardous air pollutants (HAPs) and by the CARB as toxic air contaminants (CARB, 1998). On August 27, 1998, CARB identified particulate matter in diesel exhaust as a toxic air contaminant, based on data linking diesel particulate

emissions to increased risks of lung cancer and respiratory disease. CARB is currently evaluating strategies to reduce public exposure to diesel exhaust, such as accelerating turnover of in-use equipment and greater use of alternative clean fuel technologies. The credit generation rules considered as part of the proposed project, as well as Rule 1612.1, reduce PM10 and toxic emissions in localized areas that would likely not occur except for the proposed project. Further, these credit generating rules would advance such strategies by establishing an incentive for replacing older, high-emitting diesel engines newer, cleaner engines or alternative power sources increasing the likelihood of even more benefits from reduced PM10 and toxic emissions.

Moreover, an environmental benefit factor is imbedded in the protocols for converting MSERCs and ASCs into RTCs. For example, credits generated under Rule 1610 and 2506 are discounted by 10 percent during conversion to RTCs. The 10 percent discount is retired to the benefit of the environment. Similarly, an environmental benefit factor is imbedded in the protocols for Rule 1612.1 and PRs 1631, 1632, 1633, and 2507. The credits generated from these protocols would be discounted prior to issuance by ten percent. For Rule 1612.1 and PRs 1633 and 2507, Nine percent of the environmental benefit factor will be retired to the benefit of the environment and one percent may fund the Rule 518.2 – Federal Alternative Operating Conditions offset program.

Nevertheless, to monitor and identify any unforeseen localized impacts so that corrective action could be taken, it should be noted that these credit rules are pilot programs limited in scope and are temporary. Staff intends to track the use of credits and report the findings to the Governing Board as part of the proposed project's implementation. The program review will include, but not be limited to the following information:

- General description of projects participating in the pilot program and the amount of NOx MSERCs, including the amount converted to RTCs, generated under the pilot program;

- The location of the credit generation projects and facilities using RTCs under this pilot program;

- The amount of NOx MSERCs retired to benefit the environment; and

- The amount of concurrent non-NOx emission reductions such as PM and toxic air contaminants, generated under the pilot program that have been retired to benefit the environment.

These requirements will provide the Governing Board, SCAQMD staff, regulated parties, and the public with information relevant to the use of MSERCs and ASCs by RECLAIM facilities (i.e., stationary sources).

Based on the factors discussed in this subsection, it is concluded the increased availability of MSERC and ASCs would not cause a localized exceedance of the state one-hour NO<sub>2</sub> standard or otherwise result in adverse localized air quality impact.

**MITIGATION MEASURES:** No feasible mitigation measures have been identified to minimize the potential delay in achieving anticipated emission reductions from power-producing facilities while still achieving the objectives of the project (see Chapter 2). This is particularly true because increased emissions from power generating facilities are in response to the

statewide energy crises and is not a result of the proposed project. CEQA defines "feasible" mitigation measures as those that are "capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, social, and technological factors" (Public Resources Code Section 21061.1).

**REMAINING IMPACTS:** As stated above, no feasible measures have been identified to mitigate for the potential delay in achieving anticipated emission reductions from power-producing facilities. Therefore, operation-related air quality impacts from implementing the proposed project remain significant.

**CUMULATIVE IMPACTS:** The long-term effect of proposed project, other AQMD rules, and AQMP control measures is the reduction of emissions district-wide, contributing to attaining and maintaining the state and federal ambient air quality standards. As discussed above, the projected shortfall of RTCs for the RECLAIM program due to the unanticipated statewide energy crises is diminished under the proposed project relative to the existing RECLAIM program.

As also discussed, the proposed amendments would allow exceedances by power-producing facilities that pay into the Mitigation Fee Program to be deducted up to two years after the exceedance is verified whereas the current program requires such deductions one year after an exceedance is verified. The Mitigation Fee Program provision, which allows a one-year delay in deducting allocation exceedances, is a temporary program which sunsets after 2003. Therefore, the potential delay in deduction of exceedances would end in 2005. Further, access to the Mitigation Fee Program is limited to those facilities that do not sell RTCs in that compliance year and install control equipment as required by their SCAQMD approved compliance plan. Additionally, the proposed Compliance Plan requirement obligates all power-producing facilities greater or equal to 50 MW to install control equipment regardless of whether or not they would be in violation under the existing program. Any emission reductions obtained by installation of controls and through the Mitigation Fee Program would help counteract the excess emissions associated with the electricity crises, which is not an option under the existing program.

As discussed in the analysis cumulative construction-related air quality impacts above, staff is also independently developing amendments to Rule 2005 – New Source Review for RECLAIM. The proposed amendments to Rule 2005 have been in development to recognize that air quality in several sub-regions of the district is in attainment for the state and federal ambient air quality standards. In those sub-regions, the modeling criteria used to detect potential localized air quality impact would be amended to provide for increases up to the ambient air quality standard (i.e., new emissions plus the measured background could not create a violation of the standard). In sub-regions that are not in attainment, the modeling criteria will remain the same; the new emissions may not cause a significant increase in pollutant concentrations as defined in Rule 2005, Table A-2.

Neither the proposed amendment to Rule 2005 nor the proposed project, individually or in combination, would expose sensitive receptors to substantial pollutant concentrations (see localized effects discussion above). As stated above, the proposed amendment to 2005 specifically require that an applicant whose project is in an attainment area demonstrate that the proposed project would not exceed any air quality standard. Since the air quality standards are

health-based standards, the proposed amendments would not expose sensitive receptors to pollutant concentrations in quantities that would be expected to impair health. Furthermore, the NO<sub>2</sub> ambient air quality standard is also a CEQA threshold of significance. Neither the proposed amendment to Rule 2005 nor the proposed project, individually or in combination, would result in the potential for a RECLAIM facility to emit such that they would cause a violation of the NO<sub>2</sub> ambient air quality standard. Consequently, no cumulative significant adverse air quality impacts would occur as a result of implementing the proposed amendments to Rule 2005 and the proposed project.

Finally, any projected shortfalls in anticipated emission reductions relative to the RECLAIM program due to the unanticipated energy crises will be accounted for in the next revision to the AQMP. Additional control measures will be developed, if necessary, to ensure overall improvement in regional air quality and ultimate achievement of ambient air quality standards.

Based on the above, the proposed project will not result in adverse cumulative air quality effects.

**CUMULATIVE IMPACT MITIGATION:** No mitigation required.

## **ENERGY RESOURCES**

As identified in the Initial Study, the proposed project has the potential to generate significant adverse energy resource impacts through the increased use of natural gas, electricity, or other non-conventional fuels. As a result, the proposed project could create significant effects on local or regional energy supplies.

### **Significance Criteria**

The project will be considered to have significant adverse energy/mineral resources impacts on if any one of the following criteria is met or exceeded by the project.

1. Conflict with adopted energy conservation plans;
2. Result in the need for new or substantially altered power or natural gas utility systems;
3. Create any significant effects on local or regional energy supplies and on requirements for additional energy;
4. Not comply with existing energy standards.

## Energy Resource Impacts

**PROJECT-SPECIFIC IMPACTS:** As previously discussed, the proposed emission reduction projects that would be funded through the AQIP and Mitigation Fee Program are expected to be from mobile and area sources. The credit generation rules analyzed herein, as part of the proposed project, and that would result in an increased demand for natural gas and electricity are<sup>10</sup>:

PR 1632 – Pilot Credit Generation Program for Hotelling Operations

PR 1633 – Pilot Credit Generation Program for Truck/Trailer Refrigeration Units

PR 2507 – Pilot Credit Generation Program for Agricultural Pumps

These rules set forth the mechanisms to generate emission reduction credits through the replacement of existing diesel engines with natural gas powered engines or electric motors. PR 1632 is a voluntary program to generate NOx credits by switching to use of fuel cells to power on-board marine vessel systems during vessel hotelling operations. Natural gas would be the fuel from which the hydrogen for the fuel cell is derived. Electric power is the energy source by which credits could be obtained from PR 1633 and 2507 sources.

Considered outside of the proposed RECLAIM amendments, the participation rate in these proposed rules cannot be projected as it is based on many variables for each voluntary participant. Ultimately, the cost of generating the credits versus their value will determine whether a source would make the effort to generate credits. As part of their cost consideration, sources would take into account all direct monetary costs and indirect costs (e.g., monitoring, recordkeeping, and reporting and other rule requirements, as well as worker training, learning curve for maintenance of new systems, etc.) when deciding whether to participate in voluntary credit generation programs. Other factors affecting participation include the current high prices of natural gas and electricity, the limited nature of the pilot credit generation programs (e.g., limited applicability, sunset provisions, limited credit life, etc.), and the limited manufacturing capacity of alternative-fuel engine manufacturers.

The proposed amendments to the RECLAIM program, however, envision the use of a certain pool of monies to generate credits through the protocols set forth in these rules. Since participation in these voluntary rules cannot be ascertained, the amount of natural gas and electricity that may be used due to implementation of the AQIP and mitigation fee program is unknown. For the purposes of this analysis, however, assumptions regarding the levels of participation were made in order to quantify the potential impact (see Appendix F).

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<sup>10</sup> PR 1631 – Pilot Credit Generation Program for Marine Vessels, allows NOx credit generation for marine vessels repowering existing diesel-fueled engines with new engines that meet the federal marine engine standard. These sources would continue to use diesel and would incur no increased demand for natural gas or electricity. Further, repowered engines would likely be more efficient and their use would result in a reduction in diesel fuel use. The energy impacts related to implementation of Rule 1612.1 – Mobile Source Credit Generation Pilot Program, were previously analyzed in the Final EA for that proposed rule (SCAQMD, 2001c). The energy impacts of Rule 1612.1 are included as part of the cumulative impact discussions in this Draft EA.

The amount of natural gas that may be used to generate NO<sub>x</sub> credits through the protocol set forth in PR 1632 as compared to California demand is presented in Table 4-9. The amount of electricity that may be used to generate NO<sub>x</sub> credits through the protocols set forth in proposed Rules 1633 and 2507 as compared to California demand is presented in Table 4-10. The values presented are shown through 2006 since annual credits will be issued only up to 2006 for credits generated pursuant to the proposed rules. After 2006 and subsequent years, the reduction strategy must undergo an evaluation to determine whether such reductions are surplus. PR 1632 (as well as the other proposed credit rules) will have a similar evaluation year.

Relative to current and projected natural gas and electricity demand and supply, the proposed project's potential incremental increase in consumption of these resources is estimated to be less than one-tenth of one percent and is considered insignificant. As discussed in Chapter 3, the proven natural gas reserves and potential resources that can be economically developed can provide affordable supplies to serve the U.S. at current demand levels for the next 50 years. As also discussed in Chapter 3, electricity generation capacity is currently increasing to meet forecasted energy loads.

Notwithstanding the negligible increased demand for natural gas and electricity, the limited scope and application submittal date of the proposed credit rules, and the limited manufacturing capacity for alternative fuel engines, it is acknowledged that there currently exists an extreme wholesale price fluctuation of natural gas and electricity. It is generally recognized that California's energy problem is not due to a shortage of natural resources, but rather is due to unexpected exorbitant costs. As described in Chapter 3, these costs are a combination of numerous factors.

Nevertheless, the amount of natural gas and electricity that may be used for emission credit generation projects is considered insignificant for the following reasons. First, as analyzed above, the amounts of natural gas and energy use is negligible relative to existing and projected uses. Additionally, use of these energy resources would result in a concurrent reduction in other energy resources (i.e., diesel fuel) while improving air quality. Such use of energy resources is justified and not considered wasteful. Further, the proposed project is being undertaken in part to provide power generating facilities greater flexibility in complying with existing air quality regulations. The flexibility is intended to allow power-producing facilities to contribute maximum electricity output to the state power grid, thus helping to ease the current shortage of electricity supplies. The proposed project would also facilitate to a certain extent the construction of power plants in the district<sup>11</sup>, thereby helping to further ease the current energy crises.

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<sup>11</sup> PR 2001 would allow electric generating facilities in any area within the jurisdiction on the SCAQMD that are initially totally permitted on or after January 1, 2001, to opt in to the RECLAIM program. Currently, only facilities within the South Coast Air Basin are eligible for entry into the RECLAIM program. Also, new power plants are given access to the RECLAIM AQIP.

**Table 4-9**  
**Estimated Natural Gas Usage for PR 1632**  
(million cubic feet/day)

Proposed Rule	Year 2001	Year 2002	Year 2003	Year 2004	Year 2005	Year 2006
PR 1632	0.0	0.6289	1.258	1.258	1.258	1.258
California Demand <sup>a</sup>	6,496	6,593	6,692	6,793	6,995	6998
% of California Demand	0.0	0.0095	0.0188	0.0185	0.0180	0.0180

<sup>a</sup> Annual demand interpolated from CEC projected annual growth rate for 2000-2010 (CEC 2001b)

**Table 4-10**  
**Estimated Electricity Consumption for PR 1633 and PR 2507**  
(gigawatt-hour/year)

Proposed Rule	Year 2001	Year 2002	Year 2003	Year 2004	Year 2005	Year 2006
PR 1633	4.699	9.397	23.49	23.49	23.49	23.49
PR 2507	0.2209	0.4418	1.105	1.105	1.105	1.105
<b>PROJECT TOTAL</b>	<b>4.920</b>	<b>9.838</b>	<b>24.60</b>	<b>25.60</b>	<b>25.60</b>	<b>25.60</b>
SCE/LADWP Service Area Consumption <sup>a, b</sup>	118,384	120,796	123,259	125,774	128,341	130,961
Project Consumption as % of SCE/LADWP Service Area Consumption	0.0042	0.0081	0.0200	0.0200	0.0192	0.0188
State Consumption <sup>a</sup>	261,664	267,682	273,839	280,137	286,580	293,172
Project Consumption as % of State Consumption	0.0019	0.0037	0.0090	0.0089	0.0086	0.0084

<sup>a</sup> Annual demand interpolated from 1998 historical data based on CEC projected growth rates (see Table 3-5)

<sup>b</sup> Does not include consumption in Burbank, Glendale, Pasadena utility service areas

Based on the preceding analysis, it is concluded that the proposed project's potential incremental increase in demand for natural gas and electricity would result in less than significant impacts.

**MITIGATION MEASURES:** No significant adverse energy resource impacts have been identified and, therefore, no mitigation is required.

**REMAINING IMPACTS:** No significant adverse energy resource impacts have been identified.

**CUMULATIVE IMPACTS:** The potential energy resource impact related to implementation of Rule 1612.1 was previously analyzed in the Draft EA for that proposed rule (SCAQMD, 2001d). The general means of obtaining credits from Rule 1612.1 sources is the use of natural gas or petroleum gas as alternative fuels for Class 7 and 8 heavy-duty vehicles. That analysis concluded that Rule 1612.1 would not result in significant adverse energy resource impacts. No adverse energy impacts have been identified for PAR 2005<sup>12</sup>.

For a cumulative impact analysis, the estimated natural gas demand associated with Rule 1612.1 is added to the estimated natural gas demand associated for PR 1632 and presented in Table 4-11. The reader is referred to Appendix F for the methodologies and assumptions used to calculate natural gas demand.

The potential cumulative natural gas impacts are considered less than significant since 1) the demand is not cumulatively considerable, 2) the scope and timeframe of the proposed credit rules are limited, 3) the manufacturing capacity for alternative fuel engines is limited, and 4) the proven reserves natural gas are sufficient to account for the negligible incremental increase in demand.

**CUMULATIVE IMPACT MITIGATION:** No significant adverse cumulative energy resource impacts have been identified and, therefore, no mitigation is required.

**Table 4-11**  
**Estimated Natural Gas Usage for Rule 1612.1 and PR 1632**  
(million cubic feet/day)

<b>Proposed Rule</b>	<b>Year 2001</b>	<b>Year 2002</b>	<b>Year 2003</b>	<b>Year 2004</b>	<b>Year 2005</b>	<b>Year 2006</b>
Rule 1612.1	1.762	3.523	5.285	5.285	5.285	5.285
PR 1632	0.0	0.6289	1.258	1.258	1.258	1.258
<b>CUMULATIVE TOTAL</b>	<b>1.762</b>	<b>4.152</b>	<b>6.543</b>	<b>6.543</b>	<b>6.543</b>	<b>6.543</b>
California Demand <sup>a</sup>	6,496	6,593	6,692	6,793	6,995	6,998
% of California Demand	0.0271	0.0630	0.0978	0.0963	0.0935	0.0935

<sup>a</sup> Annual demand interpolated from CEC projected annual growth rate for 2000-2010 (CEC, Jan. 2001)

<sup>12</sup> As discussed in the cumulative impact analyses for air quality, amendments to Rule 2005 are being developed independently of the proposed project.

## HAZARDS

The Initial Study identified the increased use of ammonia for NO<sub>x</sub> control as a potential hazard impact requiring further evaluation. As previously noted, potential ammonia hazards from using SCR to control NO<sub>x</sub> emissions were previously evaluated in the EA prepared for the RECLAIM program prior to its adoption in 1993. The proposed amendments to the RECLAIM program are expected to increase SCR use to a greater extent than was analyzed in the previously prepared EA. Consequently, ammonia hazards from increased SCR usage resulting from the proposed project will be analyzed below. As discussed in the Initial Study, the potential increased use of CNG, LNG, and LPG is not expected to result in significant adverse hazard impacts (see Appendix B).

### Significance Criteria

The proposed project will be considered to have significant adverse impacts relative to hazards and hazardous materials if any one of the following criteria is met or exceeded:

1. The project results in a substantial number of people being exposed to a substance causing irritation.
2. The project results in one or more people being exposed to a substance causing serious injury or death.
3. The project creates substantial human exposure to a hazardous chemical.
4. Off-site receptors are exposed to ammonia concentrations of 200 parts per million or greater (i.e., ERPG-2)<sup>13</sup>.
5. Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.

### Hazards Impacts Analysis

**PROJECT-SPECIFIC IMPACTS:** The analysis of potential hazard impacts from installing SCRs and their associated ammonia use is a very site-specific analysis that depends on specific characteristics at the project site. The ammonia transport route will depend on the project location and the location of the ammonia supplier. Since the specific site characteristics for SCR projects that might result from the proposed project are not known at this time, the SCAQNM will use the hazards analyses from three previously prepared CEQA documents for SCR projects, where the SCAQMD was lead agency, as surrogate hazard analyses for the proposed project.

SCR is a standard NO<sub>x</sub> control method for combustion equipment that requires the use of a hazardous substance - ammonia. By mixing ammonia (NH<sub>3</sub>) with NO<sub>x</sub> in exhaust gases, SCR reduces the NO<sub>x</sub> to nitrogen (N<sub>2</sub>), oxygen (O<sub>2</sub>), and water (H<sub>2</sub>O). Along with the use and handling of ammonia, however, comes the risk of upset and accidental release.

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<sup>13</sup> ERPG-2 is defined as follows: "The maximum airborne concentration below which it is believed that nearly all individuals could be exposed for up to one hour without experiencing or developing irreversible or other serious health effects or symptoms which could impair an individual's ability to take protective action."

SCR has already been installed at many facilities, including RECLAIM facilities in the district. The SCAQMD has also recently received numerous applications for installation of SCR units at RECLAIM facilities. To provide a “worst-case” analysis, it is assumed that the proposed amendments to RECLAIM, which require submittal of a compliance plan and installation of BARCT, would lead to the installation of SCR on systems where it may not have otherwise been installed.

SCR projects typically include the addition of aboveground ammonia storage tanks to service the new SCR units<sup>14</sup>. Depending on the system, ammonia is typically delivered mixed with water at a concentration of either 19 or 29 percent. Some SCRs in the district operate using anhydrous (i.e., pure) ammonia. Anhydrous ammonia is considered an acutely hazardous materials and involves greater risks during transport, storage, and use than aqueous ammonia. Anhydrous ammonia is stored and transported under pressure (i.e., it is a gas and atmospheric pressure). In the event of a leak or rupture of a tank, the anhydrous ammonia that is released vaporizes and produces a toxic cloud. Aqueous ammonia is a liquid at ambient temperatures and gas is only produced when a liquid pool (from a spill) evaporates. Current SCAQMD policy requires the use of aqueous ammonia to be used in all new SCR systems.

The SCAQMD has performed CEQA evaluations for a number of SCR installations that concluded the transportation of ammonia and onsite storage and handling creates the possibility of an accidental release that could lead to public exposures exceeding the SCAQMD significance threshold for ammonia (i.e., an ammonia concentration greater than or equal to 200 ppm). These previous CEQA analyses included various scenarios that could occur during the transportation, transfer operations, and onsite storage of ammonia. The conclusions of those analyses varied based on the specific characteristics of the proposed projects; hazard analyses are site specific. Some of the analyses concluded the use of ammonia for SCR under the circumstances specific to a project may result in significant adverse hazard impacts. Other analyses determined that the use of ammonia for SCR would not result in significant adverse hazard impacts. Three examples of recent analyses are described below. These documents can be viewed in their entirety at <http://www.aqmd.gov/ceqa>.

For each of the projects summarized below, atmospheric dispersion modeling was performed to estimate downwind concentrations of ammonia for the “worst-case” hypothetical release scenarios. The dispersion modeling was performed to provide a conservative estimate of the zone of vulnerability (the maximum downwind distance to the significance criterion of 200 ppmv [ERPG-2]). The RMP\*COMP™ program (version 1.06) was used to estimate maximum distances where ammonia concentrations would be equal to or greater than 200 ppmv. The RMP\*COMP™ program was developed by the U.S. EPA and the National Oceanic and Atmospheric Administration (NOAA).

It should be noted that the upsets that were modeled are not likely to occur and were very conservatively based on U.S. EPA RMP worst-case case assumptions. However, SCAQMD does not consider the likelihood of an incident when determining significance; only potential consequences are considered.

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<sup>14</sup> Some facilities installing new SCR systems utilize existing on-site ammonia storage tanks. At such a facility, a new SCR unit would not require additional storage, but would require a greater number of ammonia deliveries.

AES Alamitos, L.L.C. – SCR Installation at Alamitos Generating Station (Units 1, 2, 3 And 4), SCH No. 2000111039, January 2001 (SCAQMD, 2001c)

The project consists of SCRs installed on four generating units and three new 20,000-gallon aboveground ammonia storage tanks storing aqueous ammonia at a concentration of 29 percent. An assessment was performed for one onsite and one offsite accidental release. The onsite release assumes the complete failure of one 20,000-gallon aboveground storage tank. The offsite transportation release assumes that an aqueous ammonia tanker truck would empty its contents on the highway at a point of maximum population density along the transport route.

No sensitive receptors were determined to be exposed to ammonia concentrations of 200 ppm or greater from a catastrophic rupture of the ammonia storage tank. Potential ammonia concentrations associated with an accidental release during truck transport, however, were estimated to exceed 200 ppm at the closest sensitive receptors.

Los Angeles Department of Water and Power's Installation of Five Combustion Turbines at the Harbor Generating Station, Installation of Three Selective Catalytic Reduction Systems at the Scattergood Generating Station, and the Installation of One Combustion Turbine at the Valley Generating Station; SCH#:2000101008; January 2001 (SCAQMD, 2001e)

LADWP recently proposed modifications to three generating stations (i.e., Harbor (HGS), Scattergood (SGS), and Valley (VGS)). For the HGS site, the risk analysis scenarios evaluated the SCR systems for the five new 47-MW combustion turbines (CTs), related systems, and piping for each component were:

- Construction of a new ammonia pipeline to transfer aqueous ammonia from existing storage tanks at the facility to the new SCR systems for the five new 47-MW CTs.
- Incremental delivery of aqueous ammonia at HGS. One additional 5,000-gallon ammonia tanker truck delivery per week will be made to the HGS site to supply the SCR systems associated with the five new CTs. The potential severity (consequence) of the impact of an accidental tanker truck release will not increase above the existing impact associated with current aqueous ammonia deliveries. However, the potential frequency of an accidental release will increase due to increase in deliveries to the HGS site.

For the SGS site, the risk analysis scenarios associated with the installation of SCR systems on the three existing generating units (Units #1, #2, and #3) were:

- Installation of three, new aboveground 30,000-gallon aqueous ammonia storage tanks. The risk associated with the rupture of an ammonia storage tank resulting in spilling its entire contents of 30,000 gallons into a 120 percent containment dike was estimated.
- Delivery of aqueous ammonia to supply three new SCRs at the SGS site. Two 5,000-gallon tanker truck deliveries per week will be made to SGS. The impact of an accidental tanker truck release was estimated. A total release and partial release were modeled.

For the VGS site, the risk analysis scenarios associated with the installation of one SCR unit on a new 47-MW CT, the SCR-related systems, and piping for each component were:

- Installation of one new above ground 20,000-gallon aqueous ammonia storage tank. The risk associated with the rupture of the ammonia storage tank resulting in spilling its entire contents of 20,000 gallons into a 120 percent containment dike was estimated.
- Delivery of aqueous ammonia to supply one new SCR at VGS. Approximately one 5,000-gallon tanker truck delivery per month will be made to VGS. The impact of an accidental tanker truck release was estimated. A total release and partial release were modeled.

Since LADWP currently receives and stores ammonia at these facilities, the consequence of an accidental release during transport would not change as a result of the proposed project. Likewise, the potential incremental increase in risk that was estimated to result from the on-site storage of ammonia would not substantially change the expected risk from LADWP's current operations. This determination was based on the low probability of the occurrence of a catastrophic event, the very conservative assumptions used to estimate the worst-case hazards scenarios, the implementation of LADWP inspection programs, the use of safety systems, and mitigation measures to reduce risks. However, the potential does exist to exceed the U.S. EPA RMP exposure endpoints offsite from new ammonia storage tanks. Therefore, the proposed project was determined to potentially result in significant hazards impacts.

Reliant Energy Etiwanda Generating Station SCR Installation Project, SCH No. 2001021027, March 2001 (SCAQMD, 2001f)

This project included the installation of SCR systems on two boilers and two 10,000-gallon stainless steel single-walled aboveground storage tanks. The ammonia system is designed based on the use of 19 percent ammonia.

A release scenario calculated the toxic impact from a spill of 10,000-gallons of 20 percent aqueous ammonia into a containment dike sized to hold the tank contents plus an additional 10 percent. The modeled "worst-case" release of aqueous ammonia from a catastrophic failure of one of the onsite ammonia storage tanks did not adversely affect any sensitive receptors and therefore was determined to result in less than significant impacts.

An analysis was also conducted to evaluate the impact of a "worst-case" tanker truck release. Two scenarios were evaluated. The first considered a release during transport. The second considered a release during the transfer of ammonia from the truck to the storage tank.

In the unlikely event that the tanker truck would rupture and release the entire 6,000 gallons of aqueous ammonia, the ammonia solution would have to pool and spread out over a flat surface in order to create sufficient evaporation to produce a significant vapor cloud. Since roads are usually graded and channeled to prevent water accumulation and a spill would be channeled to a low spot or drainage system, the surface area of the spill would be limited. Additionally, the roadside surfaces may not be paved and may absorb some of the spill. Without this pooling effect on an impervious surface the spilled ammonia would not evaporate into a toxic cloud and impact residences or other sensitive receptors in the area of the spill. Based on the improbability of an ammonia tanker truck accident with a major release, its potential severity if it did occur, and the incorporation of mitigation measures, the conclusion of the analysis is that potential impacts due to accidental release of ammonia during transportation are less than significant.

An analysis was also conducted to evaluate the impact of a “worst-case” tanker truck release during the transfer of ammonia from the truck to the storage tank. The distance to the 200-ppm endpoint for this scenario was calculated to be 0.40 miles or 640 meters. The nearest sensitive receptor is located 0.25 miles or 400 meters from the ammonia storage area. In order to reduce the off-site impact of this scenario to less than significant, the project proponent will construct a containment dike to contain the entire volume of a tanker truck release. To evaluate the impacts of a release with this mitigation, a 6,000-gallon tanker truck spill to a 300-square-foot containment with a height of three feet was modeled. The distance to the 200-ppm endpoint for this scenario was calculated to be 0.20 miles or 300 meters. Thus, the modeled “worst-case” release of aqueous ammonia from a tanker truck to a containment dike did not adversely affect any sensitive receptors and therefore was determined to result in an impact less than significant with the incorporated mitigation.

Though site- and project-specific analyses cannot be performed for the proposed amendments to the RECLAIM program, the results of past analyses of similar projects leads the SCAQMD to reasonably assume that one or more SCR installation projects may have the necessary conditions that could generate significant adverse hazard impacts relative to the transport and storage of ammonia.

Facilities proposing to install SCR would be subject to CEQA applicability review at the time a permit application is submitted to the SCAQMD. Site-specific CEQA analyses would be performed as necessary.

In addition to the analysis of additional SCR and ammonia use, the following considers whether the use of fuel cells for marine vessel hotelling operations (i.e., PR 1632) presents any potential hazard impacts within a harbor. As described in Chapter 2, any person that elects to generate MSERCs under PR 1632 must use a fuel cell substation in lieu of auxiliary engines to provide electric energy for hotelling operations. The fuel cell system being developed by a potential project proponent is an easily deployable, maneuverable, floating fuel cell substation generator capable of producing uninterrupted power to ships while either at anchorage and/or at berth. The fuel cell would be attached alongside the ship with winch hooks and/or magnets and would move with the ship and exit the port if necessary. Thus, the potential use of fuel cells for marine vessels anchored in harbors or docked at ports would not impair implementation of or physically interfere with any port or harbor emergency response plan. Potential hazard impacts associated with PR 1632 are considered insignificant.

**MITIGATION MEASURES:** The following four mitigation measures are required for facilities installing SCR, and will be incorporated into applicable future CEQA analyses.

- H-1 Delivery and storage of aqueous ammonia at a concentration of no more than 19 percent by weight. If a facility currently receives and stores 29 percent ammonia and does not require the installation of a new storage tank, additional quantities of 29 percent solution can be received and stored.
- H-2 Use of a transportation route for ammonia shipments that provides minimum exposure in the event of an accidental release of ammonia to sensitive populations. To further minimize risks, ammonia will be shipped during off-peak traffic periods. This can be accomplished by implementation of the following:

1. Prior to the first delivery of aqueous ammonia to the site, a truck haul route map shall be submitted to SCAQMD ~~the local fire department~~ for review and approval.
2. The haul route shall minimize rail crossings and crossing of busy intersections.
3. When traveling on surface streets, the haul route shall not come within one-quarter mile of an existing or proposed school.
4. Deliveries shall not be en route to the site between 7:00 AM and 9:00 AM or between 4:00 PM and 6:00 PM weekdays.
5. The haul route shall be resubmitted if suppliers are changed.

H-3 Construction of an onsite containment system, such as a drainage system, capable of capturing the entire capacity of the tanker truck in the event of a release during off-loading operations.

H-4 Construction of a containment dike around the ammonia storage tanks to contain 110 percent of the volume of the ammonia storage tank.

**REMAINING IMPACTS:** The mitigation measures set forth herein are expected to substantially lessen the potential for exposures to significant concentrations of ammonia from an accidental release. Because of site-specific characteristics at individual facilities, it cannot be definitively concluded that implementation of the mitigation measures would reduce potential impacts to insignificance. Therefore, the proposed project is concluded to result in significant hazard impacts. As stated above, applications submitted to the SCAQMD for SCR installation will be reviewed for CEQA applicability. Site-specific CEQA analyses would be performed as appropriate.

**CUMULATIVE IMPACTS:** As one of the most widely used chemicals in the U.S, ammonia is produced, transported, and stored in massive bulk quantities. The incremental increase in the amount of ammonia transported, stored, and used to implement the proposed project is insignificant relative to existing uses.

It is extremely unlikely that upset conditions would occur at more than one RECLAIM facility at a time. It is also extremely unlikely that an upset condition at one facility would create upset at another nearby facility.

As discussed in Chapter 3, there are federal and state rules and regulations that businesses must comply with which serve to minimize the potential impacts associated with hazardous materials. The facilities that may install SCR (e.g., refineries, power-producing facilities, etc.) are required to have comprehensive safety systems as well as on-site equipment to respond to upset conditions. Such facilities are also required to have on-site personnel specifically trained in handling of hazardous materials and responding to emergency conditions.

Additionally, no significant adverse hazard impacts have been identified relative to the implementation of Rule 1612.1 or PAR 2005<sup>15</sup>. Based on these considerations, the proposed

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<sup>15</sup> As discussed in the cumulative impact analysis for air quality, amendments to Rule 2005 are being developed independently of the proposed project.

project is not expected to result in significant adverse cumulative impacts relative to hazards and hazardous materials.

## **PUBLIC SERVICES**

A comment received on the Initial Study identified potential environmental impacts to energy supplies and public services from the expedited installation of emission control equipment and the isolation of power-producing facilities from the RECLAIM universe (see Appendix C, comment letter #2). The commentator contends that an expedited schedule for control equipment installation could result in multiple generating units being unavailable during peak energy demands. The commentator asserts that if such a scenario occurred, it could be a factor in causing rolling blackouts which, in turn, could have adverse public service impacts (i.e., fire and police services, schools, etc.).

The reader is referred to the energy section above for the analysis of potential energy impacts. The following discusses the potential for the proposed project to cause significant adverse public service impacts.

### **Significance Criteria**

The proposed project will be considered to have significant adverse impacts relative to public services if:

1. the proposal result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered government facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any public services.

### **Public Service Impacts Analysis**

**PROJECT-SPECIFIC IMPACTS:** The intent of the compliance plan requirement in proposed amended Rule 2004 is to quickly retrofit existing utility boilers or repower facilities so they will be in a position to operate at maximum capacity to provide reliable energy to the California electricity grid, while still complying with applicable air quality control rules and regulations. To help minimize the potential for multiple units being unavailable during peak energy demand periods, instead of requiring all utility units to meet the BARCT requirement no later than January 1, 2003, PAR 2004 allows utilities an additional year or no later than, January 1, 2004, to meet the BARCT requirement for turbines used as peaking units.

The possibility that adverse effects will occur because multiple units will be unavailable at the same time is further minimized for the following reasons. First, affected power generating facilities are currently in discussion with the ISO to develop schedules that will allow them to install control equipment or repower units without disrupting the supply of electricity during peak energy demand periods. Further, there are a number of retrofitting or repowering projects currently in progress, which are expected to be online before the peak power demand period occurs in the summer of 2001. LADWP is currently installing five peaker turbines at its Harbor Generating station and one peaker turbine at its Valley Generating Station. Further, LADWP is

in the process of installing SCRs on three existing units at its Scattergood Generating Station. As required by the Order of Abatement between LADWP and the SCAQMD, these projects must be online by June 1, 2001. Other power plant SCR retrofit projects currently in progress and expected to be online for the peak power demand season this summer include the following: SCRs on four existing boilers at the AES Alamitos Generating Station; SCRs on two existing boilers at the AES Huntington Beach Generating Station, SCRs on two existing boilers at the AES Redondo Beach Generating Station; two SCRs on Reliant Energy's Etiwanda Generating Station, and SCR on one boiler at El Segundo Power. Finally, the proposed project does not preclude the power generating facilities from coordinating their retrofit schedules with ISO.

Further, the SCAQMD has not received any substantial evidence that the proposed project could be a factor in causing rolling blackouts. Power-producing facilities are not expected to continue to emit at the uncontrolled or minimally controlled levels at which they are currently emitting. Based upon the existing and proposed requirements, power-producing facilities are expected to substantially reduce emissions, which will contribute to complying with future allocations and help minimize future NOx emission shortfalls.

Further, as discussed in Chapter 3 and elsewhere in this document, electricity is not expected to be in short supply indefinitely. Currently, there are 10 new power plant projects that have been approved and, in some cases, are already under construction in California. Four of these projects, representing 1,219 MW, are expected to be online before the end of 2001; five of these projects, representing 4,480 MW, are expected to be online before the end of 2002; and one of these projects, representing 750 MW, is expected to be online by June 2003. Further, CEC is currently reviewing an additional 14 new electricity generating projects.

In addition to approval and construction of new electricity generating projects, the state of California is aggressively pursuing a number of other options to increase and ensure a reliable supply of electricity. Recently adopted AB 970 establishes expedited review of peaker unit projects, reducing the review time from approximately one year to six months. Governor Davis selected the state Department of Water Resources to buy electricity on behalf of the utilities, and nearly \$3 billion of taxpayer money has been spent since mid-January, 2001 toward this effort. The state is also currently in the process of finalizing contracts with power generators to secure a long-term supply of reliable energy.

It is acknowledged that there is uncertainty with regard to future RECLAIM allocations for power-producing facilities currently supplying electricity to ease the current energy crisis. Because power generating facilities would be limited under the proposed project in their ability to participate in the RECLAIM trading market and there exists uncertainty in whether sufficient emission reductions would be obtained from the Mitigation Fee Program, there is a possibility that future year allocations could be substantially reduced. However, the proposed project is being promulgated to reduce future NOx emission shortfalls. As shown in Table 3-1 in Chapter 3, under the existing RECLAIM program it is expected that there will be substantial NOx emission reduction shortfalls through the year 2005 and possibly beyond. However, through the emissions reductions anticipated from the projects funded by the mitigation fees, surplus credits generated from the pilot NOx credit generating rules, and the installation of additional control equipment, it is anticipated that the proposed project will substantially reduce potential future NOx emission shortfalls (Table 4-6). To further offset this uncertainty, a power generating

facility can participate in the private market to generate MSERCs or ASCs to minimize, if not eliminate, its overage of allocations.

Consequently, with the current projects to retrofit or repower existing electricity generating facilities in the Basin, the anticipated increase in electricity generators and other proposals to secure reliable long-term energy supplies from the power generators, it is not expected that the proposed amendments to the RECLAIM program will exacerbate the current energy crisis, including the possibility of rolling blackouts. In fact, the proposed project is anticipated to result in beneficial effects on public services such as police and fire departments, schools, etc., by generating real and surplus credits that will serve to reduce future NOx emission shortfalls. Compared to the existing situation, the proposed project will reduce the possibility of rolling blackouts in the future, which will reduce potential adverse impacts to public services. As a result, implementation of the proposed project would not result in significant adverse public service impacts.

**MITIGATION MEASURES:** No significant adverse public service impacts have been identified and, therefore, no mitigation is required.

**REMAINING IMPACTS:** No significant adverse public service impacts have been identified.

**CUMULATIVE IMPACTS:** No significant adverse public service impacts were identified for Rule 1612.1, PAR 2005<sup>16</sup>, or the proposed project. Therefore, implementation of the proposed project, in combination with the identified related projects would not result in significant adverse cumulative public service impacts.

**CUMULATIVE IMPACT MITIGATION:** No significant adverse cumulative public service impacts have been identified and, therefore, no mitigation is required.

## **ENVIRONMENTAL TOPICS FOUND NOT TO BE SIGNIFICANT**

As discussed in detail in the Initial Study, the proposed project was found not to have significant impacts relative to the following environmental topics.

Aesthetics; Agricultural Resources; Biological Resources; Cultural Resources; Geology and Soils; Hydrology and Water Quality; Land Use and Planning; Mineral Resources; Noise; Population and Housing; Public Services; Recreation; Solid/Hazardous Waste; Transportation/Traffic

The reader is referred to Appendix B for the discussion of these topics.

## **IRREVERSIBLE ENVIRONMENTAL CHANGES**

CEQA Guidelines §15126.6(c) requires an environmental analysis to consider “significant irreversible environmental changes which would be involved in the proposed project should it be implemented.” The Initial Study identified air quality, energy resources, and hazards/hazardous

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<sup>16</sup> As discussed in the cumulative impact analysis for air quality, amendments to Rule 2005 are being developed independently of the proposed project.

materials as potential impact areas. None of the potential impact areas constitute irreversible environmental changes.

The potentially significant air quality impacts are not considered irreversible. The long-term effect of proposed amendments, other AQMD rules, and AQMP control measures is the reduction of emissions district-wide, contributing to attaining and maintaining the state and federal ambient air quality standards. Any shortfalls in anticipated emission reductions will be accounted for in the next revision to the AQMP. Additional control measures will be developed, if necessary, to ensure overall improvement in regional air quality and ultimate achievement of ambient air quality standards.

Relative to current and projected natural gas and electricity demand and supply, the proposed project's potential incremental increase in consumption of these resources is considered insignificant. As discussed in Chapter 3, the proven natural gas reserves and potential resources that can be economically developed can provide affordable supplies to serve the U.S. at current demand levels for the next 50 years. As also discussed in Chapter 3, electricity generation capacity is currently increasing to meet forecasted energy loads. Furthermore, use of these energy resources would result in a concurrent reduction in other energy resources (i.e., diesel fuel) while improving air quality. Such use is justified and not considered wasteful.

The incremental increase in the amount of ammonia transported, stored, and used to implement the proposed project is insignificant relative to existing uses. Based on the analysis herein, the proposed project is not expected to result in significant adverse cumulative impacts relative to hazards and hazardous materials. No irreversible environmental changes would occur from the risk of upset associated increased use ammonia.

Accordingly, as can be seen by the information presented in this Draft EA, the proposed project would not result in irreversible environmental changes or the irretrievable commitment of resources.

## **GROWTH-INDUCING IMPACTS**

CEQA Guidelines §15126.2(d) requires an environmental analysis to consider the "growth-inducing impact of the proposed action." The proposal does not include any provisions which substantially fosters population growth or the construction of additional housing, either directly or indirectly (e.g., economic growth leading to population or housing growth).

The proposed project is intended to allow existing power-producing facilities to continue generating electricity. The ability of these facilities to continue producing electricity is not considered a growth inducing impact. Likewise, removing the influence of the power-producing facilities on RTC prices for the remainder of the RECLAIM facilities is not considered a growth inducing impact, but rather would allow continued operation of existing businesses.

Additionally to the extent that the proposed project reduces the price and increases the availability of RTCs, this may influence the decision to build a new power plant in the district, but does not require it. The decision to build a power plant is an economic decision based upon many factors, not simply the cost of RTCs. If a new power plant is constructed in the district and

its projected emissions are greater than or equal to four tons per year, it would be regulated by RECLAIM and would specifically be subject to Rule 2005, which requires installation of BACT and other aspects of New Source Review. No amendments to Rule 2005 are being proposed as part of this project. Any proposed new power plant would be required to undergo its own CEQA analysis, including a review of its potential for growth inducing impacts.

## **CONSISTENCY**

The Southern California Association of Governments (SCAG) and the SCAQMD have developed, with input from representatives of local government, the industry community, public health agencies, the USEPA - Region IX and the California ARB, guidance on how to assess consistency within the existing general development planning process in the Basin. Pursuant to the development and adoption of its Regional Comprehensive Plan and Guide (RCPG), SCAG has developed an Intergovernmental Review Procedures Handbook (June 1, 1995). The SCAQMD also adopted criteria for assessing consistency with regional plans and the AQMP in its CEQA Air Quality Handbook. The following sections address consistency between the proposed amendments and relevant regional plans pursuant to the SCAG Handbook and SCAQMD Handbook.

### **Regional Comprehensive Plan and Guide (RCPG) Policies**

The RCPG provides the primary reference for SCAG's project review activity. The RCPG serves as a regional framework for decision making for the growth and change that is anticipated during the next 20 years and beyond. The Growth Management Chapter (GMC) of the RCPG contains population, housing, and jobs forecasts, which are adopted by SCAG's Regional Council and reflect local plans and policies that shall be used by SCAG in all of its phases of project implementation and review. It states that the overall goals for the region are to (1) reinvigorate the region's economy, (2) avoid social and economic inequities and the geographical isolation of communities, and (3) maintain the region's quality of life.

### **Consistency with Growth Management Chapter (GMC) to Improve the Regional Standard of Living**

The Growth Management goals include: developing urban forms that enable individuals to spend less income on housing cost, minimizing public and private development costs and enabling firms to be more competitive, which strengthen the regional strategic goal to stimulate the regional economy. The proposed project in relation to the GMC would not interfere with the achievement of such goals, nor would it interfere with any powers exercised by local land use agencies. The proposed project will not interfere with efforts to minimize red tape and expedite the permitting process to maintain economic vitality and competitiveness. Indeed the proposed project contributes to expediting the SCAQMD permitting process by establishing the mitigation fee and the AQIP to assist affected facilities with complying with RECLAIM requirements, as well as providing a mechanism for new facilities to obtain RTCs during a period of low availability and high prices.

## **Consistency with Growth Management Chapter (GMC) to Provide Social, Political and Cultural Equity**

The Growth Management goals to develop urban forms that avoid economic and social polarization promotes the regional strategic goals of minimizing social and geographic disparities and of reaching equity among all segments of society. Local jurisdictions, employers and service agencies should provide adequate training and retraining of workers, and prepare the labor force to meet the challenges of the regional economy. The plan encourages employment development in job-poor localities through support of labor force retraining programs and other economic development measures. Local jurisdictions and other service providers in their efforts to develop sustainable communities provide, equally to all members of society, accessible and effective services such as: public education, housing, health care, social services, recreational facilities, law enforcement, and fire protection. Implementing the proposed project is expected to contribute to the goals of providing social, political and cultural equity in a number of ways. First, prohibiting power plants from participating in the RECLAIM trading market and establishing the AQIP and mitigation fee is expected to lower the price and stabilize the supply of RTCs, which helps small businesses comply with their RECLAIM allocations without paying excessive costs that could create hardships to these businesses. These effects are expected to contribute to the goals of social economic, and cultural equity to the extent that low income or minority individuals are employed at these affected small businesses.

## **Consistency with Growth Management Chapter (GMC) to Improve the Regional Quality of Life**

The Growth Management goals also include attaining mobility and clean air goals and developing urban forms that enhance quality of life, accommodate a diversity of lifestyles, preserve open space and natural resources, are aesthetically pleasing, preserve the character of communities, and enhance the regional strategic goal of maintaining the regional quality of life. The RCPG encourages planned development in locations least likely to cause environmental impacts, as well as supports the protection of vital resources such as wetlands, groundwater recharge areas, woodlands, production lands, and land containing unique and endangered plants and animals. While encouraging the implementation of measures aimed at the preservation and protection of recorded and unrecorded cultural resources and archaeological sites, the plan discourages development in areas with steep slopes, high fire potential, flood and seismic hazards, unless complying with special design requirements. Finally, the plan encourages measures that reduce noise in certain locations, measures aimed at preservation of biological and ecological resources, measures that would reduce exposure to seismic hazards and minimize earthquake damage, and measures to develop emergency response and recovery plans. In relation to the GMC, the proposed project is not expected to interfere with attaining these goals and, in fact, may serve to protect air quality in the region while at the same time requiring control equipment on power plants, thus allowing them to maximize electricity production.

## **Consistency with Regional Transportation Plan (RTP) and Congestion Management Plan (CMP)**

The proposed project is consistent with the RTP and CMP since no significant adverse impacts to transportation/circulation are expected to occur as a result of requiring affected power generating facilities to install air pollution control equipment. While slight increases in traffic and congestion may occur from transport of ammonia to affected facilities installing SCR equipment, the construction and operation of the control equipment will not require a substantial increase number of employees or result in substantial increase in traffic congestion. Potential truck trips are not expected to significantly adversely affect circulation patterns, as the volume of additional annual track traffic anticipated from the proposed project is negligible over the area of the district.

## **Consistency with the Air Quality Management Plan**

Beginning June 2000, a sharp and sudden RTC price increase occurred, mainly due to the unanticipated increase in RTC demand by power generating facilities. The currently proposed amendments to the RECLAIM program and the associated proposed MSERC generating rules are proposed in part to respond to the substantial increase in demand for electricity generation in the district and to address Governor Gray Davis' Executive Order D-24-01. The proposed project is considered to be consistent with the AQMP for the following reasons.

In response to the factors identified in the preceding paragraph affecting the RECLAIM trading market, the proposed project is being promulgated pursuant to Rule 2015(d), which allows the Executive Officer to propose amendments to the RECLAIM program to address specific problems. As indicated in the "Air Quality" section earlier in this chapter, the proposed project is expected to produce lower NO<sub>x</sub> emission reductions shortfalls (NO<sub>x</sub> emission increases) than the existing RECLAIM program as a result of programmatic exceedances of annual allocations through the year 2005 (see Table 4-8). Because NO<sub>x</sub> emission reduction shortfalls under the proposed project are expected to be lower than for the existing RECLAIM program, the proposed project is more likely to attain the state and federal ambient air quality standards in the timeframe outlined in the 1997 AQMP than would be the case under the existing RECLAIM program.

The proposed project also contains a number of specific components that are identified in the 1997 AQMP or achieve similar goals. For example, the concept of an AQIP is contained in control measure CM#97 FLX-02. An AQIP is designed to provide additional compliance options for sources by allowing these sources to demonstrate compliance through investments in air quality projects that can produce equivalent or greater emission reductions or air quality benefits. The SCAQMD adopted Rule 2501 – Air Quality Investment Program, in May 1997. Emission reductions obtained under Rule 2501, however, could not be applied to the RECLAIM program. Proposed Rule 2020 – RECLAIM Reserve, contains provisions establishing an AQIP to create a reserve of NO<sub>x</sub> credits specifically for the RECLAIM program. Implementing the AQIP portion of the proposed project is, therefore, consistent with the 1997 AQMP.

The proposed project contains pilot NO<sub>x</sub> credit generating rules, proposed Rules 1631, 1632, 1633, and 2507, which is also a strategy contained in the 1997 AQMP. Appendix IV-A states

that on- and off-road strategies focus on market-based approaches to reduce emissions from this sector. Essentially, these control measures would allow the SCAQMD to issue mobile source emission reduction credits for implementing specific strategies that reduce emissions beyond current and planned requirements. These credits would be used to comply with SCAQMD rules and regulations.