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ENVIRONMENTAL

Redondo Beach Energy Project Preliminary Staff Assessment Workshop Air Quality & Public Health Issues

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May 20, 2015

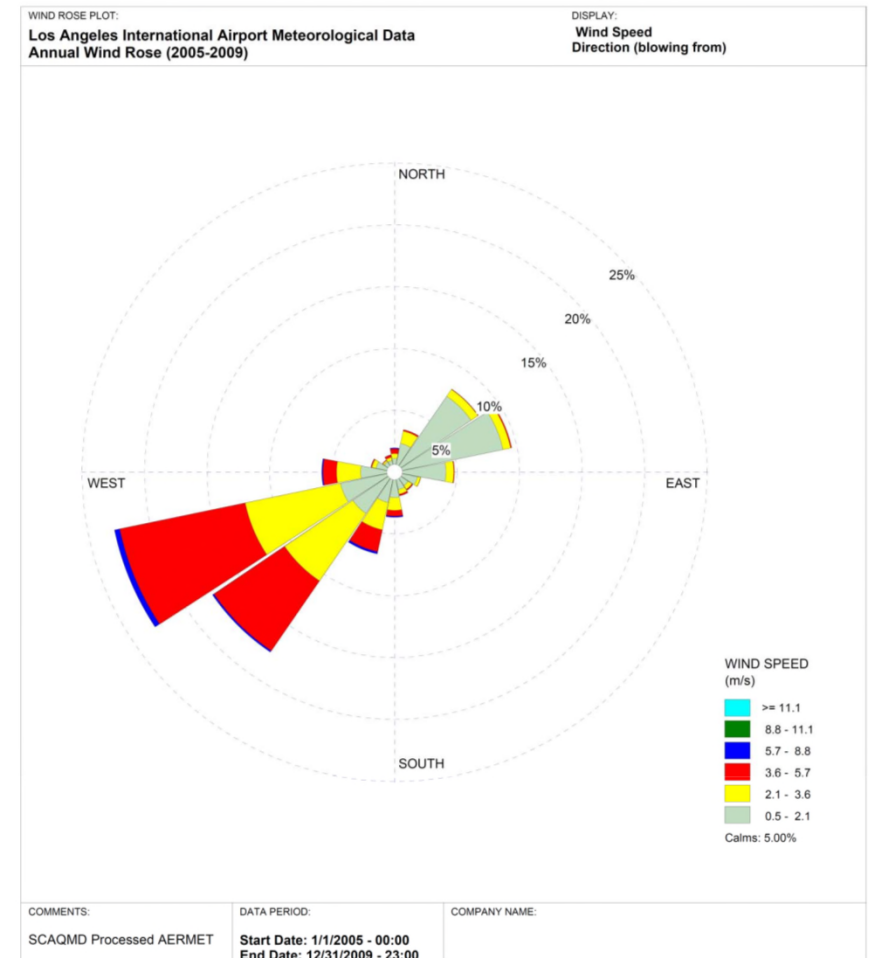
Air Quality & Public Health Issues Summary

- Power Plant Setting and Meteorology
 - Unique site impacts must be adequately addressed
 - Impacts may be significantly greater than reported
- CEQA Mitigation for Particulate Impacts
 - CEQA-significant impacts must be mitigated locally to zero
- Updated and New Federal and State Requirements
 - Review newer and cleaner technologies
 - Update to new air toxic health risk standards
 - Model secondary PM formation and update study inputs

CEC Must Require Adequate Air Quality Impact Analyses

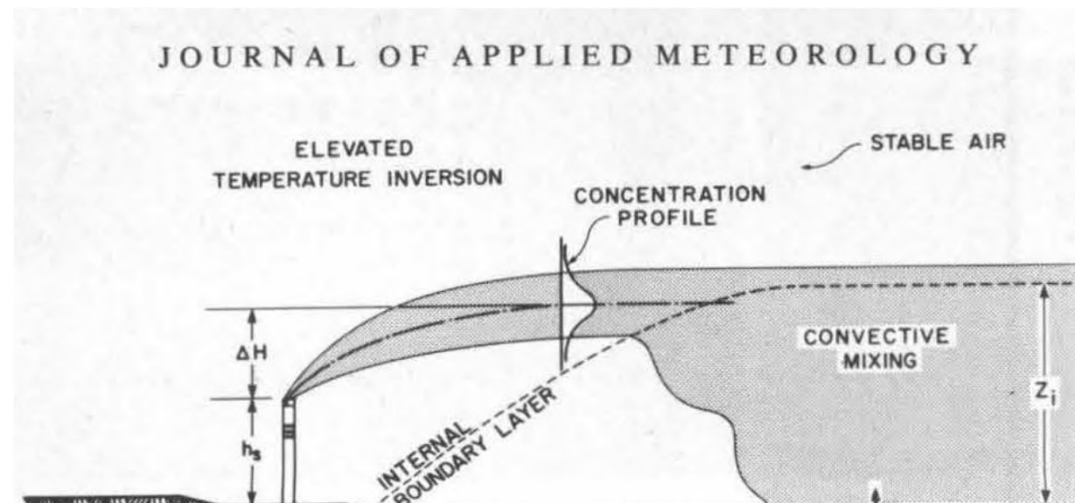
LAX 5-year Wind Rose

- AES' "standard" approach does not apply
- Unique, complicated scenario:
 - Shoreline location
 - Bluff to east; Palos Verdes peninsula
 - Lower power plant stacks
 - Atmospheric effects: Fumigation and Stagnation issues
 - Strong turbulent sea breezes
- Special impacts on nearby Bluff not studied
- Secondary fine PM formation not studied
- AERMOD and SCREEN3 models not acceptable for unique situation
- Edison decided against Redondo Power Plant repower in 1970s and 1980s



Offshore Pollution Flow & Return

- Night: offshore pollution mixes to sea surface (fumigation) and may accumulate
- Day: Pollution may return to Redondo Beach
- Phenomenon not addressed by AES
- PM and air toxic impacts may be much greater than reported



Offshore Pollution Flow & Return



Onshore Fumigation and Stagnation

- Onshore fumigation study by AES not adequate
- PM not included
- SCREEN3 model a crude tool to address important impacts
- Stagnation events (low or calm winds) keep pollution in Redondo Beach
- 200-foot bluff one mile to east; 140-foot stacks
- Long-term PM and air toxic concentrations could be much higher

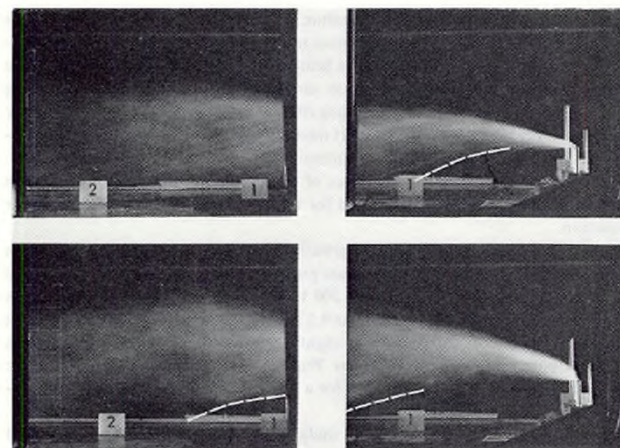


Fig. 6. Flow visualization, fumigation, unit 1, wind angle onshore wind speed 6.7 m s^{-1} , load full and one-third, $HR=1.5$.

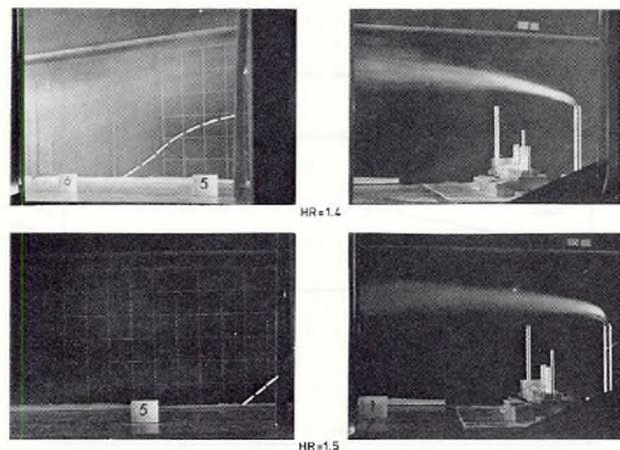


Fig. 7. Flow visualization, fumigation, unit 2 full load, wind angle onshore, wind speed 6.7 m s^{-1} , $HR=1.5, 1.4$.

RBEP Shoreline Location



RBEP stacks 160 feet above sea level < 200 feet

Actions for Special Siting Concerns – Air Quality

- Edison decided against repowering the Redondo plant, Staff may need to do the same

ACTIONS:

- Model all short-term and long-term impacts from direct and secondarily formed PM formation and air toxic emissions
- Consider special cases where plumes will interact with local atmospheric and terrain features
- Run the CALPUFF model, or consider more advanced work such as tracer studies
- Develop a meteorological network with multiple surface sites and local upper air data for at least one year
- Deny power plant licensing if unacceptable and unavoidable impacts

CEC Should Require Local Mitigation for PM

- Fine PM from power plants a serious health concern
- All RBEP emissions will cause or contribute to CEQA-significant PM impacts
 - Federal and state standards already exceeded
- Redondo Beach disagrees Rule 1304(a)(2) provides any assurance local PM mitigation will be provided
- Secondarily formed PM mitigation must be included
- Local PM mitigation is needed to offset all impacts

ACTIONS:

- Special Fund to Redondo Beach to pay for local PM mitigation projects – diesel PM reduction, traffic flow improvement, electric vehicles, solar energy, etc.
- Zero PM emissions impact must be demonstrated

CEC Should Require Use of Updated and New Information

- Staff and Air District review put on hold one year
- Previous studies now may be obsolete

ACTIONS:

- Update baseline for current plant actual emissions
- Consider newer and cleaner technology – BACT review
- Update to new State Air Toxic Health Risk Standards
 - Children and sensitive individuals, cancer risks increased 3-6 times
 - Greater cancer burden in the nearby population
- Consider EPA recommendations to model secondary PM impacts
- All studies should be re-done for regulatory and technical guidance changes
- Staff should not issue a Final Staff Assessment until the Air District FDOC is completed



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