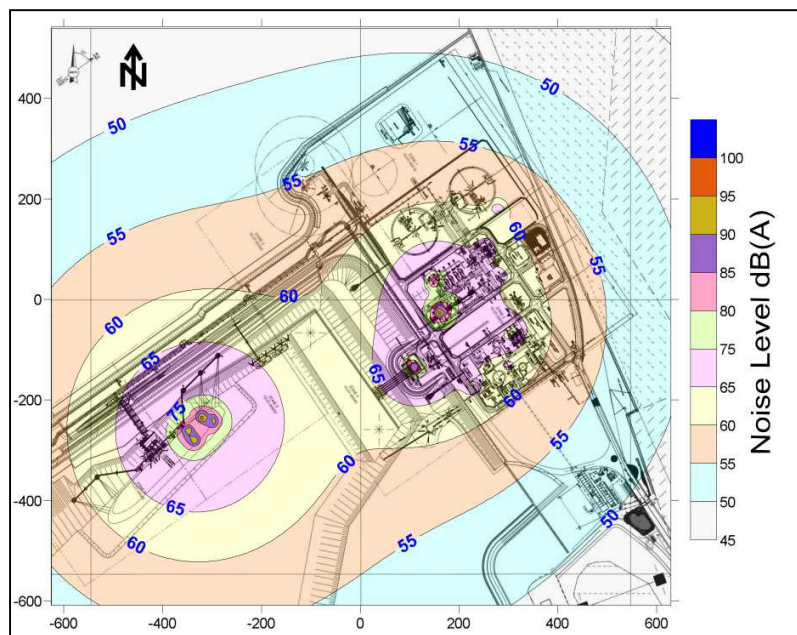


Pre-Qualification Statement of

Noise Mapping and Modeling



Cholamandalam MS Risk Services Limited

(A Murugappa Group Company and an ISO 9001:2008 Certified Organization)

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Parrys, Chennai – 600 001

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About Cholamandalam MS Risk Services Limited (CMSRSL)

Cholamandalam MS Risk Services Limited (CMSRSL) is a joint venture between the Murugappa group, India and Mitsui Sumitomo Insurance Group (MSIG), Japan, with a technical collaboration with InterRisk (Risk Management arm of MSIG). With an experience of about two decades, CMSRSL specializes in risk management, assisting businesses in assessing various risks with a high structured review process. Our services are designed to suit a wide spectrum of sectors, extending technical assistance, delivering quantifiable results that lead to effective mitigation plans. Headquartered in Chennai apart from global footprints, CMSRSL offers various comprehensive risk solutions.

CMSRSL Offers:

- Comprehensive Safety Audits
- Quantitative Risk Assessment
- HAZOP and Operability studies
- Safety Integrity Levels
- Functional safety studies
- Project, Health, Safety and Environment Review
- Fire Water Network Analysis
- Fire and Gas Detection System
- Electrical Safety Audits
- Thermography
- Construction Safety Audits
- Logistics safety
- Safety and Environment Training

Environmental Consulting Services:

- Environmental Impact Assessment
- Marine EIA
- Water Audits
- Wastewater Consulting
- Environmental Audits
- Environmental Due Diligence audits
- Noise mapping and modeling
- Air Quality modeling
- Corporate Social Responsibility
- Integrated Hydro-geological studies
- Regulatory compliance assessment
- Site assessments and investigations
- Specialized training

Cholamandalam MS Risk Services Limited offers specialized Environmental consulting solutions to the growing needs of Industrial community. As a multi-disciplinary consultancy, we work as a 'Sustainable Partner' with organizations for a greener world.

CMSRSL is a QCI/NABET accredited Environmental Impact Assessment Consulting organization.

The range of environmental consulting services has been designed to suit a wide spectrum of industrial sectors throughout India and Asia. Our professionals enriched with years of experience, provides scientific analysis, strategic planning and final reporting to our clients.

Noise mapping is a systemic approach of monitoring, modeling and graphical representation of sound levels in a particular region or an area. The three main goals of noise mapping studies include:

- ✓ Compliance Assessment
- ✓ Diagnostic Monitoring
- ✓ Noise Control Measures

Compliance Assessment:

Noise levels in and around any facility or industry shall comply with applicable local/international noise regulations. Continuous monitoring of noise levels at different areas shall be carried out to arrive at the baseline noise levels. Different units of measurements such as hourly average/day average/8-hourly average shall be utilized as per the requirement.

Diagnostic Monitoring:

Diagnostic monitoring of noise levels is applicable in case of equipment or a unit in a particular facility which is envisaged to generate higher noise levels on a continuous basis. Diagnostic monitoring techniques are widely accepted in the detection and isolation of high noise generating equipments and machineries in industries.

Noise Control Measures:

Noise mapping and modeling techniques are extensively used in designing and evaluating the adequacy of noise control measures. The rate of decrease in noise levels before and after the noise control measures as identified through modeling techniques plays a very important role in the design of noise control measures.

Applicable Noise Control Regulations

The Noise Pollution (Regulation and Control) Rules, 2000:

The Noise Pollution (Regulation and Control) Rules, 2000 enacted under the Environmental Protection Act 1986 has prescribed the Ambient Air Quality Standard in respect of Noise. As per the requirement, the day time and night time noise levels in an industrial area shall not exceed 75 and 70 dB(A) Leq respectively. The prescribed limits for Residential area is 55 and 45 dB(A) Leq for day time and night time respectively. However in case of silence zones such as hospitals, educational institutions and courts, the prescribed day time and night time noise limits are 50 and 40 dB(A) Leq respectively. Day time shall mean from 6 am to 10 pm and night time shall mean from 10 pm to 6 am.

The Factories Act, 1948:

The Factories Act, 1948 prescribes the maximum permissible noise exposure in case of continuous noise. As per the Schedule VII, Regulation 18 of the act, the maximum permissible sound pressure level for a total exposure of 8 hours in a day is 90 dB(A). The maximum exposure time for a noise level of 105 dB(A) is only one hour.

Occupational Safety and Health Administration (OSHA), US Department of Labor:

A widely accepted permissible noise exposure limits is the one suggested by Occupational Safety and Health Administration (OSHA). As per the standard no: 1910.95, the maximum permissible sound pressure level for a total exposure of 8 hours in a day is 90 dB(A). The maximum exposure time for a noise level of 105 dB(A) is only one hour.

Overall Approach of Noise Mapping and Modeling

The Environment division of Cholamandalam MS Risk Services is highly specialized in providing quality and ready to adopt solutions to our clients. Our mission is to assist clients in managing their Noise related issues by delivering a comprehensive and easily readable graphical noise contours which helps them in identifying the major noise generating sources, noise dispersion pattern within and outside the facility and the noise dispersion pattern after implementation of noise control measures. Based on the efficiency of various noise control measures identified through modeling, suitable noise control measures will be suggested. The overall process of the noise mapping study includes:

- ✓ Screening
- ✓ Noise/Sound Monitoring
- ✓ Noise Modeling
- ✓ Noise Mitigation Measures

Screening:

The first step of noise mapping study is to identify the major noise generating sources in the facility. Some of the major noise generating equipments commonly present in industries includes DG sets, compressors, fire water pumps and other large pumps, blowers, turbo generators, vacuum pumps etc. Screening also identifies and evaluates the age and condition of the equipments.

Noise Monitoring:

Noise monitoring includes the continuous/intermittent measurements of all the identified noise generating sources. The monitoring device and the monitoring methodology have to be complied with various international standards such as ISO and IEC. The noise levels can be measured either as a

simple Leq using a standard fixed frequency or with the help of advanced octave filters where the noise levels are analyzed at 10 different frequencies and averaged/fine tuned to an average Leq. Apart from the sound pressure levels, other environmental parameters such as wind speed, relative humidity, wind direction and background sound levels will also be monitored. Atmospheric information specific to the area in the form of secondary data will be sourced from Indian Meteorological Department and other government agencies.

Noise Modeling:

Noise modeling will be undertaken as per applicable international standards such as ISO and approved noise dispersion models will be utilized. Parameters such as atmospheric attenuation and wind speeds will be considered in the model. A detailed noise prediction modeling will be undertaken to establish the most likely possible ambient noise levels at the facility. The predicted noise levels will be integrated with the background values in order to compute the resultant noise levels. Noise level contours will be developed indicating the high and low noise zones.

Noise Mitigation Measures:

In order to establish the effectiveness/adequacy of the noise abatement programs considered in the design of the facility, the study will obtain the information on the noise control measures adopted on each equipment, process unit and utilities. In pre-project scenario, the modeling will be undertaken with various identified risk mitigation measures in place. The decrease in the noise levels directly relates to the effectiveness of risk mitigation measures.

List of Noise Mapping and Modeling Projects Executed by Cholamandalam MS Risk Services

1. Noise Propagation and Modeling Study for Hazira LNG Private Limited, Hazira
2. Noise Measurement, Propagation and Modeling Study for Nagarjuna Oil Corporation, Cuddalore
3. Noise Monitoring Study for Chennai Metro Rail Limited
4. Noise modeling for Ashok Leyland, Ennore, Chennai
5. Noise modeling for 1300MW Gas based Combined cycle power plant of DMIDC, Indapur
6. Noise modeling for 1300MW Gas based Combined cycle power plant of DMIDC, Guna
7. Noise modeling for 1300MW Gas based Combined cycle power plant of DMIDC, Vile Bhagad
8. Noise modeling for Birla Cements, Chittor, Rajasthan
9. Noise modeling for ACC cements, Damodar, West Bengal
10. Noise modeling for Indian Synthetic Rubber Limited, Panipat, Haryana
11. Noise modeling for Adani Ports Limited, Hazira
12. Noise modeling for IOCL Mathura Refinery, UP
13. Noise modeling for Tamil Nadu Paper Limited (TNPL), Trichy
14. Noise modeling for SPB Paper Limited, Erods
15. Noise modeling for Hindustan Mittel Energy Limited (HMEL), Crude Oil Refinery, Punjab
16. Noise modeling for Radiance Realty developers, Chennai
17. Noise modeling for Titan Industries Limited, Coimbatore

Global Presence and Strategy of Growth

Our Global Footprint



Abu Dhabi
Bangkok
Doha
Dubai
Egypt
Hong Kong
India

Italy
Kenya
Kuwait
Malaysia
Nigeria
Pakistan
Philippines

Singapore
South Korea
Sri Lanka
Taiwan
Texas
Thailand
UAE

Our Strategy for Growth

- Launch of New High-end services
- Expansion in GCC and MENA regions



- Increased penetration in EPC Segment
- Provide Cost effective Solutions
- Provide Quality delivery by leveraging Technology
- Growth through Strategic Alliances

Thank You!

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