

The Automotive Research Association of India Pune

Organizational Description

Automotive Research Association of India (ARAI) is an autonomous, non-profit co-operative industrial Research organization registered under the Societies Registration Act XXI of 1860. ARAI was founded in the year 1966 by the Indian Automotive Industry and it is affiliated to Ministry of Heavy Industry, & Public Enterprises, Government of India. We are pleased to update that ARAI is celebrating Golden jubilee Year from 10th December 2015 to 10th December 2016.

ARAI is one of the premier testing and certification agency, notified under Central Motor Vehicle Rule (CMVR) by Ministry of Road Transport & Highway, Government of India. As a service organization, ARAI mainly carries out following activities:

- **Product Development & Sponsored Projects:** Design and Development of prototypes, software development, design analysis, performance evaluation, optimization studies and guidance in these areas.
- **Testing:** Mandatory, Certification, Homologation, and Developmental Tests on vehicles, components and aggregates as per national/international regulations.
- **Calibration:** Test/measuring equipment, test rigs, sensors, etc.
- **Technical Information Services:** Dissemination of technical articles, journals, scientific research papers and periodicals to members or customers.
- **Regulatory support:** Guidance and technical support in defining National Standards and harmonization with global regulations for Automotive Industry
- **Skill Development:** Providing Graduation, Post-graduation and doctoral programs in collaboration with renowned universities and industrial training programs in specialized subjects.
- **Technical consultancy** in the field of automotive & non-automotive sectors.

Key Customers and Stakeholders

Key Customers & Stake holders are Government, Vehicle manufacturers, Components & subsystem manufacturers, Technology providers, Institutes, Academia etc.

Primarily we serve to Automotive Sector. However we also provide services to following segments albeit in lower scales.

- Railways
- Aerospace
- OffHighway / Construction equipment's

- Naval/Defense
- Genset
- Domestic appliances
- Forging Industry

Environment Management Systems

ARAI has established and maintained Operations Management System (OMS) as per the requirements of ISO 9001:2008, ISO 14001: 2004 & OHSAS 18001:2007.

EOHS Focus

ARAI has established & maintained a procedure for identification, have access to Legal & other requirements and Evaluation of its compliance that are applicable to significant aspects and hazards of our Activities, Products and Services. ARAI keeps this information up-to-date and communicates relevant information on legal and other requirements to its employees and other relevant stakeholders. The procedure also defines the method of periodically evaluating compliance with relevant Environmental and Occupational Legislation and Regulations.

The action plans (EOHS Management Programs) are prepared to achieve the objectives and targets.

The communication from employees is received for the development and review of EOHS policies and procedures to manage risks and factors affecting the work place health and safety.

Evaluation of compliance with legal and other requirements to which the organization subscribes is done periodically.

Planning of service realization

Identification of significant environmental aspects and OH&S Hazards related with the service.

The Significant aspects related to these impacts are considered in setting environmental objectives.

External communication regarding EOHS management system is received, documented and responded.

The compliance to applicable EOHS legislations & regulations is ensured.

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The monitoring & measurement of processes includes the key characteristics of the activities and operations that can have the significant impact on the environment.

Corrective Action & Preventive Action (CAPA) is taken for non-

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MEMBERSHIP

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- Offers Complimentary Registrations for a number of National & International Conferences and other events (as decided from time to time).
- Free Subscription for "Director Today" - a professional monthly journal of IOD.
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- Get your name listed on IOD website and printed in the periodic issue of "Director Today". Institutional Members get their organization logo listed on website, in addition.
- Provides platform to focus and find solutions to some of the most burning issues related to boardroom practices, Quality, Environment, Sustainability, Good Governance, CSR, Climate Change and social development agenda, through various programmes and activities.
- Keeps all members updated with the latest trends on boardroom issues, global surveys and related government, legal & SEBI regulatory rules etc.
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conformity including incident, emergency situation and near misses.

Status of validity of the required consents

- Air Act** – Valid up to 31.12.2016 vide consent to operate granted by SPCB.
- Water Act** – Valid up to 31.12.2016 vide consent to operate granted by SPCB.
- Storage / handling / disposal of hazardous chemicals / waste (including bio-medical waste)**. - Valid up to 31.12.2016 vide consent to operate granted by SPCB.
- Compliance with the prescribed approvals / standards for Effluents, Emissions, Hazardous / bio-medical / solid waste.**

Legal register is maintained, monitored & Complied as per per SPCB norms.

Awareness and Training Programs

Round the year, ARAI is engaged in disseminating knowledge thru Proficiency improvement Programs (PIP) in the field of Vehicular Emission, Alternate Fuels etc. to Transport Authorities, Students & Automobile professionals.

For employees: Through EOHS training, No. of employees trained.

Local community: Through CSR projects, Swachh Bharat Abhiyan Board display at gate, website; Policy Display at gate.

Customers and suppliers: Through quotation, while floating enquiries and PO/WO.

Trained Manpower for Operation and Maintenance

- Effluents:** AMC given to Approved Agency and quality of treated water is monitored monthly.
- Emissions:** AMC given to Approved Agency and monitored as per SPCB norms
- Hazardous / bio-medical / solid waste:** Process Owner is stores & 5 people are trained. In addition in every department EOHS coordinator is appointed

Board's Involvement in Environmental Management

EOHS Policy

Our Environmental, Occupational Health and Safety (EOHS) Policy is to carry out above activities with due attention towards environmental protection, occupational health and safety and endeavor for continual improvement in environmental, health and safety performance of employees and related persons by pursuing following goals:

- Prevention strategies for incidents leading to accidents and pollution.
- Compliance to all current applicable EOHS Legislations / regulations and other requirements to which the organization subscribes.
- Conserving natural resources by optimizing usage, minimizing waste generation, opting for recycling wherever feasible and eco-friendly disposal of waste.

Enhancing awareness towards Environment, Occupational Health and Safety for all employees.

Core and Business Values:

We are environmentally responsible and maintain good health of our employees. Top Management of ARAI is committed for continual improvement in Quality and EOHS performance by defining Operations Policy and Objectives.

Review; frequency monitoring and periodic evaluation: The Management Review Meeting (MRM) is held regularly as per frequency and EOHS related issues are discussed. A legal cell addresses the issues.

Onsite accidents prevention & offsite emergency plans and crisis management

ARAI/Emergency Preparedness and Response Plan define the manner of dealing with potential emergency situations throughout the organization so as to eliminate/mitigate the possibility of damage to the environment, personnel and property. Emergency Preparedness and Response Plan is periodically tested by conducting mock drills.

Use / Development of clean technologies

Development of alternatively fuelled engines: The Engine development lab at ARAI has developed several CNG engines for Indian OEMs ranging from 2 stroke 3 wheeler engines to heavy duty commercial engines.

Various capacitors and Automatic power factor correction panel (APFCP) installed at labs to maintain power factor unity to get incentive from MSEB:

- Generation of electricity through installation of roof top Solar system to curtail consumption of electricity
- Generation of electricity through running of transient dynamometer during engine testing activity
- Use of Sun pipes and polycarbonate roof sheets for natural lighting and saving of electricity
- Providing Turbo vents for circulation of air to improve ventilations on shop floors to save electricity
- Use of energy efficient (star rated) appliances
- Phasing out conventional lighting system by adopting energy efficient CFL lighting systems
- Phasing out Lead-acid batteries with dry Lead acid free batteries
- Phasing out of CRT computer monitors with LCD/LED technology
- Under environmental perspective of Corporate Social Responsibility, we have provided a help to an NGO for installing Solar systems, LED & CFL lamps etc.

Reduction in the consumption of -Water, Power (electricity/coal etc.), Raw material

- Reuse of treated sewage water for gardening purpose.
- Use of low flow fixtures
- Installation of meters for monitoring daily water consumption
- Instructions at appropriate places to conserve water
- Leakage avoidance through monitoring mechanism

Reduction in the generation

- **Effluents:** Zero Discharge

- **Emissions:** Compliance to SPCC consent norms
- **Hazardous Waste:** Compliance to SPCC consent norms & awareness through training for generation.
- **Solid Waste:** Encouraging the reduction of Canteen waste through displays and awareness through training. Requesting the customer /suppliers to forward the components / equipments using the plastic packing material more than 50 micron

Steps for reuse/recycle of waste

Reuse of Wooden scrap, paper, computers, and old furniture is recycled wherever possible. Optimal Use stationary, printing materials and electronic media.

House-Keeping

- Through training of sweeping & cleaning team
- Providing bins for different types of bins
- 5 S Drive & Yearly award

Environment-friendly inputs/products used

ARAI extends its commitment towards improvement of environmental performance by purchasing eco-friendly products wherever applicable. Purchasing Information is acquired from supplier for Compliance with the environmental Legislation as applicable.

Carbon Risk coverage and development of CDM projects

- Alternate Fuel Projects
- Phasing out of CFC from refrigeration and A/C systems
- Purchase and usage of energy efficient appliances
- Projects on reduction NOx reduction (vehicular NOx emission)
- Lowering of CH4 emissions-Methane Cutter technology
- Usage of alternate energy (solar)
- Replacement of conventional lights by LED
- Massive plantation
- Usage of thermal ventilators

Enhancing Environment Management System

Positive Impacts -Installation of Solar systems, Installation of sun pipes & in-situ generation of electricity through transient dynameters, installation of LED lamps, rain water harvesting:

- Use of treated effluent water for gardening
- Audio-conferences to avoid travel of employees
- Car pooling where ever possible
- Entry is restricted to vehicles only with PUC
- Communication to visitors through information on visitor's gate pass & to employees Through ARAI Quality Booklet
- CSR projects
- Compliance to applicable Legal & other requirements

As a National level Automotive Research and Development Institute,

ARAI plays significant role in Sustainable development and clean technology through R&D projects for developing cleaner, safer and sustainable mobility. Typical case study mentioned below portrays ARAI's efforts towards Clean Environment.

Introduction of cleaner production / manufacturing / processing technologies

Government of India launched the National Electric Mobility Mission Plan (NEMMP) 2020 in 2013. It aims to achieve national fuel security by promoting hybrid and electric vehicles in the country. As a part of the mission, Department of Heavy Industry, Ministry of Heavy Industries and Public Enterprises, Government of India, has formulated a scheme viz. FAME - India (Faster Adoption and Manufacturing of Hybrid and Electric Vehicles in India). The overall scheme is proposed to be implemented over a period of six years till 2020 wherein it is intended to support the hybrid/electric vehicles market development and its manufacturing eco system to achieve self-sustenance at the end of the stipulated period. This shall also enable the scheme to align with "Make In India" Initiative. Taking into consideration of high level of environmental pollution and fossil fuel usage in road transport in high density urban areas, the scheme is getting implemented in cities identified as smart cities, major metro cities, all State capitals, cities with one million plus population and cities of North Eastern States.

ARAI is assisting the Government in successful implementation of FAME India Scheme for achieving desired objectives in several ways. Our direct contributions are:

Technology development support

ARAI is actively working on development of electrification of different categories of vehicles and their components in consortium partnership with vehicle manufacturers, research institutes, academia, etc.

Drafting Policy

ARAI carried out study of several global policies and schemes. Indian scenario was closely kept in mind while drafting the technical requirements under FAME scheme for the Government.

Formulation of standards and regulations

Formulation of rules and regulation on hybrid & electric retro fitment of in-use vehicles was taken up on priority. Relevant test data in Indian context was collected. Considering vast number of in-use vehicle of different vintage in the country, it was established that there would be significant benefit with the electrification of in-use vehicles. There were hardly any international references available and with the unique Indian situation, formulation of standards was a challenging task.

Testing and evaluation

Several models of Hybrid & Electric vehicles and their components were tested as per the newly formulated standards for assessing potential fuel economy and pollution improvements. Functional and operational Safety of the vehicles was also tested. Compliance Certificate by ARAI is now considered as the basic requisites for qualifying the vehicles under the scheme.

The Automotive Research Association of India, Pune is a winner of Golden Peacock Environment Management Award -2016