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A. GENERAL INFORMATION

1. Date

August 20, 2018

2. Department

California Air Resources Board

3. Organizational Placement (Division/Branch/Office Name)

Mobile Source Laboratory Division

4. CEA Position Title

Division Chief

5. Summary of proposed position description and how it relates to the program's mission or purpose. (2-3 sentences)

The California Air Resources Board's (CARB) mission is to promote and protect public health, welfare and ecological resources through the effective and efficient reduction of air pollutants while recognizing and considering the effects on the economy and the State.

Under the direction of the Assistant Executive Officer (AEO), the Chief of the Mobile Source Laboratory Division (MSLD) plans, organizes and directs the work of the Division's multidisciplinary professional staff of engineers, scientists and planners to identify issues, formulate policies and develop and implement strategies to best meet the requirements of the federal Clean Air Act, the California Clean Air Act, State statutes, and global warming laws. This position will be focused on better aligning and coordinating CARB's vehicle emission testing programs in light of the experiences gained through major enforcement cases including the multi-billion dollar Volkswagen settlement. Vehicle and engine emissions testing is a critical component of CARB's program. To be sold in California, all cars and trucks must be certified as meeting regulatory requirements.

6. Reports to: (Class Title/Level)

Deputy Executive Officer, CEA Level B

7. Relationship with Department Director (Select one)

- Member of department's Executive Management Team, and has frequent contact with director on a wide range of department-wide issues.
- Not a member of department's Executive Management Team but has frequent contact with the Executive Management Team on policy issues.

(Explain):

8. Organizational Level (Select one)

- 1st
- 2nd
- 3rd
- 4th
- 5th (mega departments only - 17,001+ allocated positions)

B. SUMMARY OF REQUEST

9. What are the duties and responsibilities of the CEA position? Be specific and provide examples.

Under the direction of the AEO (CEA request under separate cover) and oversight of the Deputy Executive Officer (DEO), the Chief, of MSLD will plan, organize and direct the work of the Division's multidisciplinary professional staff of engineers, and scientists to identify issues, formulate policies and develop and implement strategies to best meet the requirements of the federal Clean Air Act, the California Clean Air Act, State statutes, and global warming laws. The Chief of MSLD will direct the development and implementation of regulations, planning documents and programs to address legislative requirements and Board needs. The Chief of MSLD will represent the Board and Executive Office in meetings with advisory committees; the legislature; local, state, federal and international agencies; non-governmental organizations; industry groups; academic and research organizations; and the public.

This position will be focused on better aligning and coordinating CARB's vehicle emission testing programs in light of the experiences gained through major enforcement cases including the multi-billion dollar Volkswagen settlement. Vehicle and engine emissions testing is a critical component of CARB's program. To be sold in California, all cars and trucks must be certified as meeting regulatory requirements. CARB relies on a variety of information to inform the certification approval including manufacturer data, third party laboratory testing, and in-house testing. For approved certifications, ongoing testing is necessary to ensure emissions performance in the real-world is up to standard. Given the amount of economic value to the industry, and the amount of emissions from transportation, a robust emissions testing program is critical to CARB's success. Programs under the jurisdiction of the CEA would include:

- Oversee testing of light duty vehicles and heavy-duty engines to ensure they meet emission standards at the time of certification, and as they age;
- Coordinate and oversee field operations to ensure cars meet warranty requirements;
- Test and evaluate to ensure that cars, light trucks, diesel engines and off-road engines meet in-use emission standards;
- Oversee laboratory operations to analyze pollutants collected during car and engine testing;
- Coordinate the development and implementation of new test protocols in coordination with researchers and other air quality management agencies;
- Coordinate the development and implementation of on-road testing using portable emissions monitoring systems (PEMS)
- Oversee the collection of information and evidence for emissions compliance cases.

The Chief of MSLD will interact with CARB's Executive Team on a daily basis and will be responsible for developing new policies to address emerging air quality and climate change issues. The Chief of MSLD will also be responsible for implementing existing policies and programs including developing recommendations for action as issues arise. This reorganization and the creation of this position will relieve workload and pressure on existing CEAs.

Under the administrative direction of CARB and its Executive Officer, the Chief of MSLD will plan, organize and direct the work of the Division's programs and staff, formulate policy and policy recommendations; act as part of the Executive Staff in the identification of issues, formulation of policies and development of strategies to best meet program objectives, and represent the Board in negotiating issues related to regulations with manufacturers, federal, state and local agencies and the general public.

The Chief of MSLD will plan, organize, and direct the work of a multi-disciplinary professional and technical staff involved in the evaluation of new and in-use vehicles and engines to support the development of requirements for cleaner vehicles and engines, to ensure that new vehicles and engines meet emission standards, and to ensure that in-use vehicles and engines continue to meet emission standards as they age.

The Chief of MSLD will formulate and recommend policy regarding testing protocols; and provide consultation and assistance to federal, state, and local agencies on vehicle and engine testing as it relates to the control of air pollutants and the enforcement of emission standards. The Chief of MSLD will also participate in the formulation of administration policies, represent the Executive Officer in matters relating to the program and operations of the Division; and prepare budgetary estimates and recommendations. The Chief of MSLD will select and train staff and evaluate their performance and take appropriate action or make recommendations; appear before legislative committees; address interested stakeholder groups; and prepare and review various documents.

B. SUMMARY OF REQUEST (continued)

10. How critical is the program's mission or purpose to the department's mission as a whole? Include a description of the degree to which the program is critical to the department's mission.

- Program is directly related to department's primary mission and is critical to achieving the department's goals.
- Program is indirectly related to department's primary mission.
- Program plays a supporting role in achieving department's mission (i.e., budget, personnel, other admin functions).

Description:

The MSLD will be responsible for aligning and coordinating CARB's vehicle emission testing programs in light of the experiences gained through major enforcement cases including the multi-billion dollar Volkswagen settlement. Vehicle and engine emissions testing is a critical component of CARB's program. To be sold in California, all cars and trucks must be certified as meeting regulatory requirements. CARB relies on a variety of information to inform the certification approval including manufacturer data, third party laboratory testing, and in-house testing. For approved certifications, ongoing testing is necessary to ensure emissions performance in the real-world is up to standard. Given the amount of economic value to the industry, and the amount of emissions from transportation, a robust emissions testing program is critical to CARB's success.

B. SUMMARY OF REQUEST (continued)

11. Describe what has changed that makes this request necessary. Explain how the change justifies the current request. Be specific and provide examples.

In 2015, CARB announced an enforcement action against Volkswagen (VW) for their use of an illegal “defeat device” that circumvented the emission control system used to control for smog and particle forming NOx. After over a year of investigation, including laboratory and field testing, along with detailed evaluation of VW’s onboard diagnostic system, CARB had sufficient evidence to elicit a confession of guilt from VW. VW admitted to having defeat devices on over 85,000 2009 to 2015 model year diesel-fueled vehicles—this would not have happened without extensive laboratory and field testing conducted by CARB for over a year. A legal settlement will bring a total of \$1.4B to California, but also require CARB to have extensive resources to implement vehicle fixes and funds distribution.

As a result of the settlement, VW must invest \$800 million in California over ten years to advance California’s nation-leading, zero-emissions vehicle programs pursuant to a plan VW will develop after CARB input and CARB approval following a public process. These investments will focus on brand neutral infrastructure, education, and access projects for all Californians.

VW must also pay almost \$423 million into a trust for VW use in California for projects to reduce oxides of nitrogen (NOx) to mitigate past and future excess NOx emissions caused by the 2.0 and 3.0 L vehicles.

In response to concerns surrounding real world emission impacts, potential defeat devices and implementation of settlements, CARB received additional positions to both implement the Volkswagen Settlement and expand CARB’s ability to investigate other manufacturers. Expansion of audit and compliance efforts were broadened to ensure real world emission performance was being attained and ensure no further incidences of defeat devices were occurring across mobile sources. So far, these additional resources and investigations have led CARB to announce enforcement action on Fiat Chrysler for use of defeat devices, a significant recall of an after treatment part for Cummins for over 500,000 heavy duty diesel engines nationwide and continuing investigation into other vehicle and engine manufacturers. All of these activities may result in additional settlements and corrective action which must be implemented by CARB.

With the addition of these positions to the Emission Compliance, Automobile Regulation and Science Division (ECARS), the division has grown significantly and the span of control has become too large to manage as a single division, even with two Assistant Division Chiefs. The current responsibilities of ECARS include the following: development and implementation of the clean cars program; development and implementation of the zero-emission vehicle (electric car) program; certification of all light-duty vehicles, heavy-duty engines, motorcycles, and off-road engines sold in California; certification of aftermarket parts for cars, light-trucks, heavy-duty trucks and off-road equipment; testing of light duty cars to ensure they meet emissions standards; field operations to ensure cars meet warranty requirements; testing and evaluation to ensure cars, light trucks, diesel engines and off-road engines meet in-use emission standards; laboratory operations to analyze emissions collected during car and engine testing; laboratory testing to ensure transportation fuels meet emission standards; and development and implementation of the on-board diagnostics (“check engine” light) program.

This request for a new CEA is part of a broader reorganization that will consolidate programs with the closest relationships into the same division, facilitate an increased focus on long-term transportation planning, and create divisions which have a manageable set of program and number of staff. Under this reorganization, the existing Division Chief of ECARS will take responsibility for the renamed Emissions Certification and Compliance Division. This new CEA will be the Division Chief for the newly created Mobile Source Laboratory Division. CARB is also requesting (under separate cover) a new CEA for the Division Chief of the newly created Transportation Systems Division.

The new Chief for MSLD will assume the responsibilities of the current Division Chiefs with respect to policymaking in the program areas described above. Successful implementation of these program areas is critical to CARB’s mission of providing and maintaining healthful air and reducing global warming pollutants.

This re-organization is necessary to ensure close coordination between light duty vehicle, and heavy duty engine testing, on-road emissions testing and laboratory testing of fuels. Units within the new division will:

- Oversee testing of light duty vehicles and heavy-duty engines to ensure they meet emission standards at the time of certification, and as they age;
- Coordinate and oversee field operations to ensure cars meet warranty requirements;
- Test and evaluate to ensure that cars, light trucks, diesel engines and off-road engines meet in-use emission standards;
- Oversee laboratory operations to analyze pollutants collected during car and engine testing;
- Coordinate the development and implementation of new test protocols in coordination with researchers and other air quality management agencies;
- Coordinate the development and implementation of on-road testing using portable emissions monitoring systems (PEMS)
- Oversee the collection of information and evidence for emissions compliance cases.

C. ROLE IN POLICY INFLUENCE

12. Provide 3-5 specific examples of policy areas over which the CEA position will be the principle policy maker. Each example should cite a policy that would have an identifiable impact. Include a description of the statewide impact of the assigned program.

Pre-certification vehicle and engine testing: When a vehicle or engine manufacturer submits an application for emissions certification to CARB, detailed information about the emissions control system including emissions data is required. CARB staff performs a detailed evaluation of the information, and in many cases will request one or more vehicles to test. These tests are a critical part of the certification process, because they evaluate the information provided by manufacturers. Tests may include both laboratory dynamometer testing, and on-road testing using portable emissions monitoring systems (PEMS). At a minimum, vehicles are required to pass tests based on regulatory test protocols under specified conditions using specified fuels. However, as a result of the VW emissions cheating case, CARB has developed new test protocols designed to evaluate emissions controls in a variety of simulated and real world conditions to ensure vehicles are performing within regulatory limits. This work is performed by highly skilled engineers and scientists who must ensure the highest integrity of data collection and information gathering in order for CARB to be successful in carrying out its mission. Going forward, the Chief of MSLD will need to make decisions about new protocols, test equipment and approaches for testing future technology, such as automated vehicles.

On-road vehicle emissions testing: CARB's regulatory program relies on successful implementation to ensure emission reductions are achieved in practice. This means that vehicle and engine emissions controls must meet regulatory standards when tested in the laboratory and when performing on the road. Over time, these systems can deteriorate. These systems may also be designed to meet standards in the laboratory, but not in the real-world as evidenced by the VW emissions cheating case. Therefore, on-road emissions testing, both with PEMS and remote sensing, are critical components of implementing CARB's programs in a manner that realizes emissions benefits in practice. In the case of VW, on road testing revealed discrepancies between certification testing and real-world performance. In that case, the emissions control systems were designed to perform differently in the laboratory and on-road. The careful on-road testing work led to laboratory testing to eventually detail the specifics of devices that were developed to defeat the regulatory emissions tests. This type of information collection requires detailed chain-of-custody protocols for data and confidential document and information handling. The Chief of MSLD may be under court gag order for legal settlements, and therefore must carefully manage the flow of information between staff and to the executive team.

Post-certification vehicle and engine testing: The Chief of MSLD will oversee highly skilled scientific and engineering staff who perform laboratory measurements of vehicles and engines after they have been certified. This work may be the result of information from on-road measurements, a tip (CARB gets tips from the public, manufacturer employees, academic researchers and others) or as part of routine investigation. CARB has recently developed the capability to test heavy duty engines, and this work will scale-up in the new Riverside facility. Unlike light duty vehicles (cars and light trucks), heavy-duty engines are certified separate from the vehicle in which they are used. In the real-world, these engines are used in all types of on-road vehicles, including long-haul trucks, garbage trucks, drayage trucks, etc. Testing engines in-use is essential to understand the real-world performance but in order to evaluate an engine compared to the regulatory standard, engine dynamometer tests must be performed. This is a critical emerging area of research and development to determine how to ensure vehicles and engines remain clean and efficient over their useful life. In particular, given that diesel engines are responsible for the vast majority of smog and particle forming NOx and more than 95% of diesel particulate matter emissions, CARB's ability to test engines with ever more complicated emissions control systems is a critical part of achieving success in our mission.

C. ROLE IN POLICY INFLUENCE (continued)

13. What is the CEA position's scope and nature of decision-making authority?

As Chief of MSLD, the incumbent will oversee the work of a multi-disciplinary staff in the evaluation and development of State strategies for the control of criteria pollutant, toxics and greenhouse gas emissions from transportation sources. Because the Division impacts almost all CARB programs, every CARB division is directly affected by decisions made by this position's incumbent. The incumbent will perform the following typical tasks:

- Oversee development and implementation of vehicle and engine testing and policy development for mobile emission sources and program areas including: reduction of criteria pollutants to meet federal Clean Air Act requirements, climate change and greenhouse gases, toxic air contaminant control, diesel particulate matter risk reduction, and transportation incentive programs
- Formulate and recommend policy regarding emission testing and related air quality issues from mobile sources;
- Provide consultation and assistance to federal, state, regional and local agencies on air pollution problems; and coordinate air pollution control activities with those of other programs or services of the Board and state and local and regional agencies.
- Participate in the formulation of administration policies, represent the Executive Officer in matters relating to the program and operations of the Division; and prepare budgetary estimates and recommendations.
- Select and train staff and evaluate their performance and take appropriate action or make recommendations; appear before legislative committees; address interested stakeholder groups; and prepare and review various documents.
- Coordinate with other divisions, prepare correspondence and reports; appear before various committees and groups to represent Board policy or to provide expertise; review and edit staff documents; and plan, prioritize and allocate Division resources.

The Chief of MSLD will make and implement decisions about policy areas within his/her jurisdiction, including those described above. The Chief of MSLD will also have an influential role in making and implementing policy decisions for the CARB as part of the Executive Management Team on issues of broad importance to the agency. This Chief of MSLD will have independent capacity for the purpose of carrying out and enhancing the mission of CARB. The Chief of MSLD will represent CARB before the Board, the Legislature, the press, in public meetings, workshops and in-person meetings on issues related to emission testing.

14. Will the CEA position be developing and implementing new policy, or interpreting and implementing existing policy? How?

This CEA will be both developing and implementing new policy, and interpreting and implementing existing policy. In the new policy arena, the CEA will oversee vehicle emissions testing protocols, including novel testing cycles to better mimic real-world driving conditions. In the Volkswagen case, engineers needed to develop new laboratory test to "trick" the vehicle into thinking it was on the road. This work revealed a scheme to cheat the emissions test. The CEA will also implement existing programs to ensure that regulatory standards are being met in real life. This CEA will work closely with the Division Chief of the Emissions Certification and Compliance Division and the Enforcement Division to develop and resolve compliance cases.