

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
COLORADO RIVER BASIN REGION**

CEASE AND DESIST ORDER R7-2011-0044  
REPLACING CDO R7-2009-0049  
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)  
PERMIT CA0104248  
ISSUED TO  
IMPERIAL IRRIGATION DISTRICT EL CENTRO GENERATING STATION  
El Centro – Imperial County

The California Regional Water Quality Control Board, Colorado River Basin Region (hereinafter Regional Water Board) is authorized under California Water Code (CWC) section 13301 to issue a Cease and Desist Order (CDO) requiring Imperial Irrigation District (hereinafter, Discharger), to cease and desist from discharging contrary to NPDES permit requirements and abide by the terms and conditions herein. CWC section 13385(j)(3) exempts the Discharger from mandatory minimum penalties where the waste discharge is in compliance with a CDO issued pursuant to CWC section 13301, if all the requirements of that CDO are met. This Order replaces CDO R7-2009-0049 and provides a revised time schedule for the Discharger to finish construction of necessary alternative treatment facilities to meet the Final Effluent Limitations in the Discharger's current Permit.

**FACTUAL BASIS FOR ISSUING THE CDO**

The facts and information upon which this CDO is based are as follows:

1. Discharger, P.O. Box 937, Imperial, California 92251, owns the El Centro Generating Station (Station) which is a gas and oil-fired power plant located at 485 E. Villa Avenue, El Centro, CA 92243. The Station has a total output of 240 Megawatts (MW) and consists of two (2) steam units and one (1) combined cycle unit. The steam units are rated at 77 MW and 46 MW (This Unit currently is being re-powered and will have a nameplate rating of 144 MW once the Re-power Project is complete), and the combined cycle unit is rated at 117 MW (85 MW gas turbine and 32 MW steam turbine). All units are cooled using water circulated through unit specific cooling towers.
2. The Station provides treatment and chlorination and dechlorination process units. Cooling tower supply water is treated with corrosion inhibitors, deposit control agents, microbial control agents and a coagulant and flocculent. In addition chlorination is used as an oxidizing biocide and sulfuric acid is added for pH control to protect cooling tower equipment. The effluent from the Station's cooling system is dechlorinated using a bisulfite based solution prior to discharge into receiving waters. The discharger adds the following chemicals to the cooling tower water:
  - Sodium Hypochlorite
  - Nalco 3DT 185
  - Nalco 3DT 195
  - Nalco 1336
  - Nalco 7320
  - Sulfuric Acid

The Station has a potential to discharge a maximum of 0.995 million gallons per day (MGD) of industrial cooling water to Central Drain No. 5, which flows into the Alamo River then to the Salton Sea. The Central Drain No. 5, the Alamo River and the Salton Sea are waters of the United States.

3. The designated beneficial uses of waters in the Imperial Valley Drains are:
  - a. Fresh Water Replenishment of Salton Sea (FRSH)
  - b. Industrial Service Supply (IND)<sup>1</sup>
  - c. Water Contact Recreation (REC I)<sup>2</sup>
  - d. Non-Contact Water Recreation (REC II)
  - e. Warm Water Habitat (WARM)
  - f. Wildlife Habitat (WILD)
  - g. Preservation of Rare, Threatened, or Endangered Species (RARE)<sup>3</sup>
  
4. On July 1, 2004, the Regional Water Board adopted Waste Discharge Requirements (WDRs) Order R7-2004-0086 (NPDES Permit CA0104248). WDRs Order R7-2004-0086 specified in relevant part, Interim and Final Effluent Limitations for free cyanide, copper, and selenium. The limitations were based on monitoring results and the California Toxics Rule to protect the beneficial uses of the surface state waters. The Effluent Limitations for free cyanide, copper and selenium are as follows:

Constituent	Units	Date Effluent Limit Becomes Effective	Average Monthly Effluent Limit	Maximum Daily Effluent Limit
Free Cyanide (Interim)	µg/L	July 1, 2004	10.0	10.0
Free Cyanide (Final)	µg/L	July 1, 2009	0.5	1.0
Copper (Interim)	µg/L	July 1, 2004	200.0	200.0
Copper (Final)	µg/L	July 1, 2009	2.39	4.8
Selenium (Interim)	µg/L	July 1, 2004	66.0	66.0
Selenium (Final)	µg/L	July 1, 2009	4.09	8.22

Order R7-2004-0086 expired on July 1, 2009, the same date that the final effluent limits became effective.

5. In 2006, URS Corp. reviewed commercially available technologies that would result in permit compliance. URS recommended that the Discharger pursue deep injection well technology. In 2006 and 2007, the IID Energy Production Section actively developed the deep injection well solution that included sending out an RFP for drilling. Efforts to get final approval to move forward with construction, using the deep injection well approach, were significantly slowed down when actual project costs came in at twice what was originally estimated. On March 16, 2009, Regional Water Board received a letter from

<sup>1</sup> Potential use

<sup>2</sup> Although some fishing occurs in the downstream reaches, the presently contaminated water in the river makes it unfit for any recreational use. An advisory has been issued by the Imperial County Health Department warning against the consumption of any fish caught from the river and the river has been posted with advisories against any body contact with the water.

<sup>3</sup> Rare, endangered, or threatened wildlife exists in or utilizes some of these waterway(s). If the RARE beneficial use may be affected by a water quality control decision, responsibility for substantiation of the existence of rare, endangered, or threatened species on a case-by-case basis upon the California Department of Fish and Game on its own initiative and/or at the request of the Regional Board; and such substantiation must be provided within a reasonable time frame as approved by the Regional Board

the Discharger that indicated that the Discharger had conducted pilot studies to evaluate treatment technologies to reduce the levels of constituents of concern in the Station's effluent, but it had not identified a treatment technology that would ensure the discharge from the Station would meet the CTR discharge limitations. Therefore, in its March 2009 letter, the Discharger requested the issuance of a CDO from the Regional Board to provide time for the Discharger to comply with its NPDES permit for the Station or evaluate and implement alternative methods of treatment and disposal, such as treating the wastewater from the Station using reverse osmosis with discharge of concentrated reject water to an evaporation pond; or the use of deep injection disposal of the wastes.

6. On May 21, 2009, less than 2 months before expiration of Board Order R7-2004-0086 and imposition of the final effluent limits, the Regional Water Board adopted CDO R7-2009-0049. Pursuant to CWC Section 13385(j)(3), CDO R7-2009-0049 exempts the Discharger from Mandatory Minimum Penalties (MMPs) for violations of the Final Effluent Limitation for free cyanide, copper, and selenium by extending the Interim Effluent Limits in Board Order R7-2004-0086 until December 31, 2011 and requiring the Discharger to complete specific tasks to implement an alternative treatment technology and comply with the Final Effluent Limitations.
7. CDO R7-2009-0049 contains the following time schedule to achieve compliance with all requirements of Board Order R7-2004-0086:

<b>Milestone</b>	<b>Milestone Description</b>	<b>Milestone Submittal</b>	<b>Completion Date</b>
1	Complete Pollution Prevention Plan	Submit a Copy of the Pollution Prevention Plan to the Regional Board	December 31, 2009
2	Prepare Preliminary Design of the Reverse Osmosis/Evaporation Pond System	Submit a Copy of Design Drawings to the Regional Board	June 30, 2010
3	Complete Final Design of the Reverse Osmosis/Evaporation Pond System	Submit a Copy of Final Design Drawings to the Regional Board	December 31, 2010
4	Complete Construction of the Reverse Osmosis/Evaporation Pond System	Submit Summary and Verification of Construction Completion	December 31, 2011

8. Less than a month later, on June 18, 2009, the Regional Board adopted WDRs Order R7-2009-0020 (NPDES Permit CA0104248), the current discharge permit for the Discharger, which rescinded the previous discharge permit (WDRs Order R7-2004-0086) except for enforcement purposes. As a result of the Discharger receiving approval from the US Environmental Protection Agency to designate the receiving waters as fresh water rather than salt water, as it was previously designated, the final effluent limitations specified in the WDRs Order R7-2009-0020 (Page 13, IV.A.1.a) are somewhat less stringent than the final effluent limitations specified previously in the previous discharge permit:

**Final Effluent Limitations in Current Permit**

Parameter	Units	Date Effluent Limit Becomes Effective	Average Monthly Effluent Limit	Maximum Daily Effluent Limit
Copper, Total Recoverable <sup>1</sup>	µg/L	July 1, 2009	22	52
	lbs/day <sup>2</sup>	July 1, 2009	0.18	0.43
Cyanide, Free <sup>1</sup>	µg/L	July 1, 2009	4.3	8.5
	lbs/day <sup>2</sup>	July 1, 2009	0.04	0.07
Selenium, Total Recoverable <sup>1</sup>	µg/L	July 1, 2009	4.1	8.2
	lbs/day <sup>2</sup>	July 1, 2009	0.03	0.07

<sup>1</sup> Final effluent limitations are in effect starting July 1, 2009.

<sup>2</sup> The mass-based effluent limitations are based on a design capacity of 0.995 MGD.

Nevertheless, as discussed in greater detail below, the Discharger has demonstrated that it is unable to meet the final effluent limits for copper, cyanide and selenium in Order R7-2009-0020 with its current treatment system.

9. WDRs Order R7-2009-0020 requires the Discharger to conduct and submit for review and approval a Compliance Evaluation report for copper, selenium, and cyanide effluent limitation by September 29, 2009 (Compliance Evaluation). Information provided in the Compliance Evaluation, as well as an earlier letter from the Discharger dated March 12, 2009, indicates that the Discharger cannot meet the final effluent limitations in Order R7-2009-0020 with their current treatment system. In fact, the Discharger has violated the Final Effluent Limits for free cyanide, copper, and selenium 90 times since July 1, 2009. The Discharger's Compliance Evaluation cites CDO R7-2009-0049 and the interim effluent limits provided therein as being applicable while the Discharger pursues one of three zero discharge options as a means of compliance. One of the three potential zero discharge options evaluated by the Compliance Evaluation is deep well injection.
10. New or modified control measures are necessary in order for the Discharger to comply with the final effluent limitations for free cyanide, copper and selenium in Order R7-2009-0020; and the new or modified control measures cannot be designed, installed, and put into operation within 30 calendar days.
11. Although Order R7-2009-0020 does not specifically acknowledge the prior adoption of CDO R7-2009-0049, it is reasonable to conclude that the Regional Board intended both orders be active and enforceable considering: (1) the proximity in which the new NPDES permit (WDR Order R7-2009-0020) and the CDO were adopted; (2) the continued need for discharger to implement new or modified control measures to meet Final Effluent Limits; and (3) the subsequent adherence to and enforcement of the CDO terms and condition by the Discharger and Regional Board staff. Conversely, if the CDO was superseded by the adoption of the new NPDES permit, then the Board's adoption of the CDO was meaningless because it was not necessary until the Final Effluent Limits became effective on July 1, 2009 (the same date that the previous discharge permit Order R7-2004-0086 expired and a new permit would be put into operation). Furthermore, the Discharger would become subject to mandatory minimum penalties on July 1, 2009 despite having demonstrated an inability to immediately comply with the Final Effluent Limits.

12. The Discharger elected deep well injection disposal over the use of a reverse osmosis (RO) and evaporation pond system early in the implementation process. Paragraph No. 4 of the CDO provides a process by which an alternative method of treatment and disposal other than RO could be selected by submitting an engineering report detailing the alternative method before December 31, 2009. The Pollution Prevention Plan (Plan), which was submitted by the December 31, 2009 deadline, complied in part with paragraph no. 4 because it contains an analysis of pollutant sources, pollution prevention alternative analysis, and an implementation plan and time schedule. The Plan presented deep injection wells as a potential option and effective technology for wastewater disposal at the Station. The long term implementation plan provided the general goal of working toward a zero discharge solution to solve the compliance issues. The short term implementation schedule in the Plan, however, calls for adhering to the time schedule and milestones in CDO R7-2009-0049 and does not commit to pursuing an alternative method of treatment and disposal other than RO.
13. The Discharger continued to consider deep well injection disposal as a treatment option in parallel with the RO and consistently informed the Regional Board of progress made on both treatment options. On April 15, 2010, the Discharger informed the Regional Board in its Quarterly Report that it had identified deep well injection disposal as the most cost effective solution and would be seeking approval from its board to implement a deep well injection disposal project. The October 15, 2010 Quarterly Report also states that the Discharger intended to begin construction on the deep well injection project in January 2011.
14. The Discharger has submitted quarterly reports as required by paragraphs 3 and 5 of the CDO, has been in constant compliance with all interim limits of CDO R7-2009-0049 since its issuance, and has complied with milestones 1 through 3 on page 5, order paragraph No. 1. Milestone 1 was satisfied when the Discharger submitted its Plan on December 23, 2009. On June 30, 2011, Milestones 2 and 3 were satisfied when the Discharger submitted design drawings for deep well injection disposal by the completion dates required in the CDO for submission of comparable plans for reverse osmosis. Accordingly, the Discharger has complied with CDO No. R7-2009-0049 while evaluating potential alternative treatment technologies and ultimately implementing deep well injection disposal as the most feasible and economic zero discharge treatment option.
15. The Discharger prepared and presented a Major Work Authorization to its Board of Directors for approval. The costs documented in the Major Work Authorization are as follows:

Capital Cost of RO/Evaporation pond treatment option - \$24,689,743  
Project Total Cost of RO/Evaporation pond treatment option - \$27,158,717

Capital Cost of Deep Injection Well option - \$17,078,597  
Project Total Cost of Deep Injection Well option - \$18,786,457.

The Discharger's Board of Directors approved the Major Work Authorization for a deep well injection project on November 2, 2010.

16. On June 1, 2011 in a letter to Regional Board staff, the Discharger requested that CDO R7-2009-0049 be amended in order to allow additional time to implement the deep well injection project. The alternative method selected for addressing the more stringent California Toxics Rule requirements is to eliminate the process wastewater discharge to Central Drain No. 5 by disposing of it through two new U.S. Environmental Protection Agency (USEPA) Class I deep injection wells to be located at the Station. Each injection well will be designed to accept a maximum injection rate of approximately 850 gallons per minute. A piping collection system including injection pumps and new motor control center will be installed to handle the process wastewater. Construction of the deep injection wells and the collection system will be contracted as turnkey projects and inspected and approved by IID. IID has selected Layne Christensen Company to drill the injection wells, and based on their drilling schedule, IID would be in a position to execute the above ground collection and injection piping system contract in December 2011.

## FINDINGS

The Regional Water Board finds:

17. CDO R7-2009-0049 continued to be in effect and enforceable even after the subsequent adoption of the current discharge permit WDRs Order R7-2009-0020 (NPDES Permit CA0104248). The Discharger has complied with CDO R7-2009-0049 by submitting quarterly reports, maintaining constant compliance with all interim limits, and satisfying the milestones 1 through 3 on page 5, paragraph No 1. of the CDO by submitting the required pollution prevention plan and design documents for deep well injection disposal that are comparable to the required RO documents.
18. CDO R7-2009-0049 needs to be clarified and updated to reflect the subsequent adoption of WDRs Order R7-2009-0020, the selection of deep well injection disposal as the means of compliance, and the need for additional time to finish constructing and implementing the deep well injection disposal project.
19. This Order rescinds and replaces CDO R7-2009-0049.
20. This Order provides a time schedule for the Discharger to update and continue implementing pollution prevention activities, and to construct the necessary alternative treatment facilities in order to meet the Final Effluent Limitations in WDRs Order No. R7-2009-0020. CDO R7-2009-0049 provided approximately 2-1/2 years for Discharger to implement alternative treatment technologies. An additional 18 months are necessary to complete the construction and implementation of the deep injection well collection system. The time schedule for completion of these actions, as provided in this Order, does not exceed 5 years from July 1, 2009 (the date that the Final Effluent Limitation became effective) as permitted by 13385 (j)(3)(c)(i).
21. In a letter dated August 10, 2011, USEPA approved the Discharger's proposal to start drilling two nonhazardous deep injection wells. This is a significant milestone and clears the way for the Discharger to complete its deep well injection program within 18 months.
22. Section 13301 of the CWC states in relevant part:

"When a regional board finds that a discharge of waste is taking place, or threatening to take place, in violation of requirements or discharge prohibitions prescribed by the regional board or the state board, the board may issue an order to cease and desist and

- direct that those persons not complying with the requirements or discharge prohibitions (a) comply forthwith, (b) comply in accordance with a time schedule set by the board, or (c) in the event of a threatened violation, take appropriate remedial or preventive action.”
23. CWC Section 13385(h) and (i) require the Regional Board to impose mandatory minimum penalties upon dischargers that violate certain effluent limitations. CWC Section 13385(j) exempts certain violations from the mandatory minimum penalties. CWC Section 13385(j)(3) exempts the discharger from mandatory minimum penalties “where the waste discharge is in compliance with either a cease and desist order issued pursuant to Section 13301 or a time schedule order issued pursuant to Section 13300, if all the [specified] requirements are met.”
  24. Compliance with this Order exempts the Discharger from mandatory penalties for violations of effluent limitations in accordance with CWC Section 13385(j)(3) from the date of this Order’s adoption by the Regional Board.
  25. In accordance with CWC Section 13385(j)(3), based on results of effluent monitoring provided by the Discharger dated March 12, 2009 and their monthly Self-Monitoring Reports (SMRs), the Discharger is not able to consistently comply with final effluent limits for free cyanide, copper, and selenium in Board Order R7-2009-0020. The Discharger needs additional time to complete the deep injection well project, obtain required approvals from the USEPA, and to complete the construction of the deep injection wells and collection system.
  26. Specifically, pursuant to CWC Section 13385(j)(3)(B)(i), mandatory minimum penalties under 13385 (h) and (i) shall not apply because the Discharger is not able to consistently comply with the effluent limitations for free cyanide, copper and selenium established in the WDRs for the reasons detailed below.
    - a. These effluent limitations are new;
      - i. The effluent limitations for free cyanide, copper, and selenium are new parameters established in WDRs Order R7-2004-0086, revised by WDRs Order R7-2009-0020 to reflect a change in the characterization of the receiving waters, and required by the California Toxics Rule, which rescinded WDRs Order 99-016. WDRs Order 99-016 did not contain effluent limitations for free cyanide, copper, and selenium.
    - b. These effluent limitations have become effective after the effective date of the WDRs and after July 1, 2000;
    - c. New or modified control measures are necessary in order to comply with the effluent limitations; and
    - d. The new or modified control measures cannot be designed, installed, and put into operation within 30 calendar days.
  27. CWC Section 13385(j)(3) requires the Discharger to prepare and implement a pollution prevention plan pursuant to Section 13263.3 of the CWC. Such a plan was prepared and submitted as required by CDO R7-2009-0049. The pollution prevention plan prepared and submitted in accordance with CDO R7-2009-0049 must be reviewed, revised as necessary, and resubmitted in accordance with the time schedule in the Order below.

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 Imperial Irrigation District El Centro Generating Station

28. Since the time schedules for completing the implementation of deep well injection technology exceeds 1 year, this Order includes interim requirements and dates for their achievement as required by 13385 (j)(3)(c)(iii).
29. Issuance of this CDO to enforce CWC Division 7, Chapter 5.5 is exempt from the provisions of the California Environmental Quality Act (Public Resources Code, Section 21000 et seq.), in accordance with Section 15321 ("Enforcement Actions by Regulatory Agencies"), Title 14, California Code of Regulations (CCRs).
30. Any person aggrieved by this action of the Regional Board may petition the State Water Resources Control Board to review the action in accordance with CWC Section 13320 and CCRs, Title 23, Section 2050 and following. The State Board must receive the petition no later than 5:00 p.m., thirty (30) days after the date of this Order, except that if the thirtieth day following the date of this Order falls on a Saturday, Sunday, or state holiday, the petition must be received by the State Water Board by 5:00 p.m. on the next business day. Copies of the law and regulations applicable to filing petitions may be found on the Internet at:

[http://www.waterboards.ca.gov/public\\_notices/petitions/water\\_quality](http://www.waterboards.ca.gov/public_notices/petitions/water_quality).

Copies will also be provided upon request.

**IT IS HEREBY ORDERED**, that in order to meet the provisions contained in Division 7 of the CWC and regulations adopted there under, the Discharger shall comply with the following:

The Discharger is required to prepare and implement an updated Pollution Prevention Plan pursuant to Section 13263.3 of the CWC. The Discharger must address the issues specified in Section 13263.3(d)(3) and shall take specific actions as indicated in the following time schedule to achieve compliance with all requirements of Board Order R7-2009-0020:

<b>IMPERIAL IRRIGATION DISTRICT, EL CENTRO GENERATING STATION</b>			
<b>MILESTONE</b>	<b>MILESTONE DESCRIPTION</b>	<b>MILESTONE SUBMITTAL</b>	<b>COMPLETION DATE</b>
1	Complete an updated Pollution Prevention Plan (PPP)	Submit a Copy of the Updated Pollution Prevention Plan to the Regional Board	<b>October 31, 2011</b>
2	Drill and Confirm Well #1 is Geologically Acceptable for Wastewater Disposal	Submit Copy of Well Acceptability Report	<b>November 30, 2011</b>
3	Issue Notice to Proceed to Procure and Install Wastewater Collection and Injection Surface Equipment for Two Injection Wells	Submit a Copy of Notice to Proceed	<b>December 30, 2011</b>



IMPERIAL IRRIGATION DISTRICT, EL CENTRO GENERATING STATION			
MILESTONE	MILESTONE DESCRIPTION	MILESTONE SUBMITTAL	COMPLETION DATE
4	Complete Construction and implementation of the Wastewater Collection and Injection Surface Equipment for Two Injection Wells	Submit Summary and Verification of Construction Completion	May 30, 2013

1. Wastewater to Central Drain No. 5 shall not exceed the interim effluent limit for free cyanide, copper and selenium. The interim effluent limit is based on plant performance data, reference data from representative wastewater treatment facilities, and best professional judgment:

<u>Constituent</u>	<u>Unit</u>	<u>Date Interim Effluent Limit Becomes Effective</u>	<u>Maximum Daily Effluent Limit</u>	<u>Average Monthly Effluent Limit</u>
Free Cyanide, Total Recoverable	µg/L	May 21, 2009	10.0	10.0
	lbs/day	May 21, 2009	0.087	0.087
Copper, Total Recoverable	µg/L	May 21, 2009	200.0	200.0
	lbs/day	May 21, 2009	1.73	1.73
Selenium, Total Recoverable	µg/L	May 21, 2009	66.0	66.0
	lbs/day	May 21, 2009	0.572	0.572

2. The Discharger shall submit quarterly reports, due by the 15<sup>th</sup> of January, April, July, and October of each year, on the status of the preparation and implementation of the Pollution Prevention Plan and associated Milestones listed in the Table above.
3. Plans and schedules are subject to the prior approval of the Executive Officer. Failure to comply with the terms of this Order may result in administrative civil liability of up to \$10,000 per day for each violation pursuant to Sections 13263.3(g), 13385(c)(1), and/or 13308 of the CWC.
4. In accordance with California Business and Professions Code Sections 6735, 7835, and 7835.1, engineering and geologic evaluations and judgments shall be performed by or under the direction of California registered professionals (i.e., civil engineer, engineering geologist, geologist, etc.) competent and proficient in the fields pertinent to the required activities. All technical reports specified herein that contain workplans, that describe the conduct of investigations and studies, or that contain technical conclusions and recommendations concerning engineering and geology shall be prepared by or under the direction of appropriately qualified professional(s), even if not explicitly stated. Each technical report submitted by the Discharger shall contain a statement of qualifications of the responsible licensed professional(s) as well as the professional's signature and/or stamp of the seal.

5. Any person signing a document submitted under this Order shall make the following certification: *"I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my knowledge and on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment."*
6. If in the opinion of the Regional Board's Executive Officer, the Discharger fails to comply with this Order, the Executive Officer may issue a complaint against the Discharger under Article 2.5, Chapter 5, Division 7 of the CWC, and seek the appropriate administrative civil liability and/or request the Attorney General to take appropriate action against the Discharger, including injunctive relief and civil monetary liability as deemed appropriate.

I, Robert Perdue, Executive Officer, do hereby certify that the foregoing is a full, true and correct copy of an Order adopted by the Regional Water Quality Control Board, Colorado River Basin Region, on September 15, 2011.

  
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ROBERT PERDUE  
Executive Officer