

**State of California**

Division of Occupational Safety and Health  
RID 0950621 Index 4021  
2424 Arden Way, Suite 165  
Sacramento, CA 95825

**Inspection Number:** 313228637  
**Inspection Dates:** 07/22/2009-01/19/2010  
**Issuance Date:** 01/21/2010  
**CSHO ID:** H9839  
**Optional Inspection Nbr:** 008-10



Phone: (916) 263-2800 Fax: (916) 263-2798

**Citation and Notification of Penalty**

**Company Name:** CA Water Resources  
**Inspection Site:** 460 Glen Dr, Oroville, CA 95965

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**Citation 1 Item 1** Type of Violation: **General**

T8 CCR 3220(e)(2)(C): (e) Training. (2) The employer shall advise each employee of his/her responsibility under the plan at the following times. (C) Whenever the plan is changed.

The employer changed their emergency action plan for the Hyatt Power Plant in Oroville, CA by changing the location of the incident command center from the control room at the entrance of the Power Plant. The employer failed to train employees on the changes and to reflect those changes in their Emergency Action Plan.

Date By Which Violation Must be Abated: 02/08/2010  
Proposed Penalty: \$ 1125.00

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See pages 1 through 4 of this Citation and Notification of Penalty for information on employer and employee rights and responsibilities.

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**Citation 2 Item 1** Type of Violation: **Serious**

T8 CCR 3203(a)(4)(B): (4) Inspections shall be made to identify and evaluate hazards. (B): Whenever new substances, processes, procedures, or equipment are introduced to the workplace that represent a new occupational safety and health hazard.

The employer removed the Energy Dispersion Ring from the river tunnel in April of 2009 and the employer failed to inspect and evaluate the hazard to employees, created by the removal of the Energy Dispersion Ring. On July 22, 2009 employees were directed to enter the River Valve Chamber and operate the river valves at their full flow rate without the dampening effect of the Energy Dispersion Ring.

On 7/22/09 an employee was seriously injured while he was inside of the River Valve Chamber located inside of Hyatt Power Plant (Oroville Dam) when the Howell Bunger Valves were operated.

Date By Which Violation Must be Abated: 02/03/2010  
Proposed Penalty: \$ 25000.00

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**Citation and Notification of Penalty**

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**Inspection Site:** 460 Glen Dr, Oroville, CA 95965

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**Citation 3 Item 1 Type of Violation: **Serious****

T8 CCR 3203(a)(7)(D): (7) Provide training and instruction: (D) Whenever new substances, processes, procedures or equipment are introduced to the workplace and represent a new hazard.

The employer removed the Energy Dispersion Ring from the river tunnel in April 2009 and failed to provide training and instruction on the hazards created by the removal of the Energy Dispersion Ring to employees who operated the river valves from the river valve chamber on July 22, 2009.

Date By Which Violation Must be Abated: 02/03/2010  
Proposed Penalty: \$ 10125.00

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**Citation and Notification of Penalty**

**Company Name:** CA Water Resources  
**Inspection Site:** 460 Glen Dr, Oroville, CA 95965

**Citation 4 Item 1** Type of Violation: **Serious Willful**

T8 CCR 3328(a): Machinery and equipment shall be of adequate design and shall not be used or operated under conditions of speeds, stresses, or loads which endanger employees.

When the river valves were installed in the 1960's the US Bureau of Reclamation performed modeling of the River Valve Operation and designed the Energy Dispersion rings to be used in conjunction with the valves in the river valve tunnel. The Energy Dispersion Ring was damaged in 1968 and DWR contracted with UC Davis on or about 1992-1994 to perform a study on the use of the cone valves and the need for the Energy Dispersion Ring. The UC Davis report documented the turbulence and energy created in the tunnel with and without the Energy Dispersion Ring and concluded that operation of the river valves in the tunnel should not be done or that the flow rate should be severely limited in the absence of a fully operational Energy Dispersion Ring. DWR was aware of these studies and had copies and a video of the actual test.

The Energy Dispersion Ring was removed and not replaced from the River Valve System in April of 2009. On 7/22/09, at approximately 7:30 AM in the Hyatt Power Facility (Oroville Dam) 5, employees were working in the River Valve Chamber and were directed to open the river valves to 100% (5,400 cubic feet per second) without the Energy Dispersion Ring. Opening of these valves inside of the River Valve System without the Energy Dispersion Ring created water flow with such great turbulence that it blocked the make-up air vent of the River Valve System. This blockage of the make-up air vent created a vacuum that caused a break-away wall in the River Valve Chamber (where the employees were located) to be pulled away and detached. These valves were operated in the river valve system under conditions, where the speed of water being released created stresses and loads (vacuum pressure) that exposed the employees to flying debris, vacuum forces and drowning. The UC Davis tests and studies and the original engineered design of the river valve tunnel were ignored and the operation of the river valves at 100% was directed by DWR and carried out on July 22, 2009.

On 7/22/09 an employee was seriously injured while he was inside of the River Valve Chamber located inside of Hyatt Power Plant (Oroville Dam) when the Howell Bungler Valves were operated without the Energy Dispersion Ring. This was done willfully and exposed a total of five employees to serious injury and death.

Date By Which Violation Must be Abated: 02/03/2010  
Proposed Penalty: \$ 70000.00

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**Citation and Notification of Penalty**

**Company Name:** CA Water Resources  
**Inspection Site:** 460 Glen Dr, Oroville, CA 95965

**Citation 5 Item 1** Type of Violation: **Serious**

T8 CCR 3328(g): Machinery and equipment in service shall be maintained in a safe operating condition.

Machinery and equipment in the River Valve Tunnel System was not maintained in a safe operating condition. The River Valve Tunnel System includes the break-away wall in the river valve chamber and the vacuum alarm on the break-away wall.

Corroded bolts were identified that were intended to secure the break-away wall. DWR did not inspect or maintain the break-away wall on any regular schedule.

The vacuum alarm on the break-away wall in the RVC Chamber was disconnected and not in operation when the river valves were operated on 7/22/09. DWR did not inspect or maintain this alarm on any regular schedule.

On 7/22/09 the operation of the valves increased the vacuum pressure to dangerous levels that pulled the break-away wall from its attachments (bolts) and into the River Valve Tunnel. An employee was seriously injured while he was inside of the River Valve Chamber during this event.

Date By Which Violation Must be Abated: 02/03/2010  
Proposed Penalty: \$ . 25000.00

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**Citation and Notification of Penalty**

**Company Name:** CA Water Resources  
**Inspection Site:** 460 Glen Dr, Oroville, CA 95965

**Citation 6 Item 1 Type of Violation: **Serious****

T8 CCR 5157(c)(1): The employer shall evaluate the workplace to determine if any spaces are permit-required confined spaces.

The employer failed to identify and evaluate the hazards of the river valve chamber after the removal of the Energy Dispersion Ring to determine if the space is a Permit-Required Confined Space. On 7/22/09 the employer directed employees to go to the River Valve Chamber and to operate the river valves at full flow rate without the Energy Dispersion Ring in place.

On 7/22/09 an employee was seriously injured while he was inside of the River Valve Chamber located inside of Hyatt Power Plant (Oroville Dam) when the Howell Bunger Valves (river valves) were operated.

Date By Which Violation Must be Abated: 02/03/2010  
Proposed Penalty: \$ 10125.00

Compliance Officer/District Manager

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State of California  
Division of Occupational Safety and Health  
Cal/OSHA District Office  
2424 Arden Way, Suite 165  
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Phone: (916) 263-2800 Fax (916) 263-2798

## NOTICE OF PROPOSED PENALTIES

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Company Name: CA Water Resources  
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Mailing Address: 460 Glen Dr, Oroville, CA 95965  
  
Issuance Date: 01/21/2010  
  
Reporting ID: 0950621  
Index Code: 4021

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Summary of Penalties for Inspection Number 313228637

Citation 1, General	= \$	1125.00
Citation 2, Serious	= \$	25000.00
Citation 3, Serious	= \$	10125.00
Citation 4, Serious Willful	= \$	70000.00
Citation 5, Serious	= \$	25000.00
Citation 6, Serious	= \$	10125.00
<b>TOTAL PROPOSED PENALTIES</b>	<b>= \$</b>	<b>141375.00</b>

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Penalties are due within 15 working days of receipt of this notification unless contested. If you are appealing any item of this citation, remittance is still due on all items that are not appealed. Enclosed for your use is a Penalty Remittance Form.

If you are paying by credit (MasterCard and Visa): Please have this form on-hand when you are ready to make your payment. The company name, index code, reporting ID, and Citation number(s) will be required to ensure that the payment is accurately posted to your account. Please go to [www.dir.ca.gov/dosh](http://www.dir.ca.gov/dosh) to access the secure payment processing site.

If you are paying by check: Mail this Notice of Proposed Penalties, the Penalty Remittance Form, along with a copy of the Citation and Notification of Penalty to:

DEPARTMENT OF INDUSTRIAL RELATIONS  
CASHIER, ACCOUNTING OFFICE  
P. O. BOX 420603  
SAN FRANCISCO, CA 94142-0603

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**Investigation Summary**

Reporting ID	Investigation Summary Number	OSHA-36 Number	OSHA-36 Establishment Name
0950621	202489431	102514833	CA Water Resources
Event Date	07/22/09	Event Time	07:30 am
Type of Event	hit by tools and debris at over 100 mph		

Inspection Number/ Establishment Name	313228637 CA Water Resources
Injured/Deceased Name	[REDACTED]
Sex:	M. Male
Age:	37
Injury:	B. Hospitalized
Nature:	12 Fracture
Part of Body:	04 Body system
Source of Injury:	02 Air pressure
Event Type:	01 Struck by
Environmental Factor:	05 Flying object action
Human Factor:	09 Safety devices removed or inoperative
Task:	A Regularly Assigned
Substance Code:	
Occupational Code	575 - ELECTRICIANS

*[Handwritten signature]*  
 [Stamp]

**Abstract:**

The accident takes place when 5 employees are directed to go to the River Valve Chamber of the Hyatt Power Facility inside of Oroville Dam. The employees are directed to open the river valves to 100% on 7/22/09. When the valves were opened to 85% the Break-Away wall was vacuumed/pulled away and down stream into the 35 foot river diversion tunnel. The vacuum eliminated the lights and sucked any loose unattached materials or equipment in the access areas above the RVC toward the RVC. The vacuum knocked 3 (#1,2 and 3) off of their feet and toward the tunnel. The vacuum pulled 2 employees over the edge of the RVC concrete platform. Employee #4 was hanging over the end of the valve holding on to bent and twisted the metal railing. Employee #5 was hanging over the edge of the RVC concrete platform holding on to the bent rail and was struck by various tools and equipment that was located in the access tunnel to the RVC.

When the river valves were installed in the 1960's the US Bureau of Reclamation performed modeling of the River Valve Operation and designed the Energy Dispersion rings to be used in conjunction with the valves in the river valve tunnel. The energy dispersion ring was damaged in 1968 and DWR contracted with UC Davis in 1993 to perform a study on the use of the cone valves and the need for the energy dispersion ring. The UC Davis report documents the turbulence and energy created in the tunnel with and without the energy dispersion ring and concludes that operation of the river valves in the tunnel should not be done or severely limited with out the energy dispersion ring. DWR was aware of these studies and had copies and a video of the actual test.

Employee #5 was seriously injured with head trauma, broken leg, broken arm and multiple bruises and cuts. He was hospitalized for 4 days.

CSHO Signature: *[Handwritten Signature]* Date: 11/15/10

DM Signature:	<i>[Handwritten Signature]</i> ADM	Date:	<i>1/20/10</i>
RM Signature:		Date:	