U. S. Department of L bor
Occupational Safety and Hea.. Administration

Investigation Summary

Fri Nov 15, 2013 2:01pm

Reporting ID	Investigation Summary Number	OSHA-36 Number	OSHA-36 Establishment Name
0950612	**202654976**	**102879608**	**Tesla Motors, Inc.**
Event Date	**11/13/13**	Event Time	**11:47 am**
Type of Event	**Second degree burns from opening pressurized chamber.**		

Inspection Number/ Establishment Name	**317216729 Tesla Motors, Inc.**
Injured/Deceased Name	**Jorge Terrazas**
Sex:	**M. Male**
Age:	**33**
Injury:	**B. Hospitalized**
Nature:	**05 Burn or scald (heat)**
Part of Body:	**18 Lower leg(s)**
Source of Injury:	**23 Heat (environmental or mechanical)**
Event Type:	**07 Rubbed or abraded**
Environmental Factor:	**11 Temperature above or below tolerance level**
Human Factor:	**09 Safety devices removed or inoperative**
Task:	**A Regularly Assigned**
Substance Code:	
Occupational Code	**766 - FURNACE, KILN AND OVEN OPERATORS**

Inspection Number/ Establishment Name	**317216729 Tesla Motors, Inc.**
Injured/Deceased Name	**Jesus Navarro**
Sex:	**M. Male**
Age:	**31**
Injury:	**B. Hospitalized**
Nature:	**05 Burn or scald (heat)**
Part of Body:	**18 Lower leg(s)**
Source of Injury:	**23 Heat (environmental or mechanical)**
Event Type:	**07 Rubbed or abraded**
Environmental Factor:	**11 Temperature above or below tolerance level**
Human Factor:	**09 Safety devices removed or inoperative**
Task:	**A Regularly Assigned**
Substance Code:	
Occupational Code	**766 - FURNACE, KILN AND OVEN OPERATORS**

Inspection Number/ Establishment Name	**317216729 Tesla Motors, Inc.**
Injured/Deceased Name	**Kevin Carter**
Sex:	**M. Male**
Age:	**32**
Injury:	**B. Hospitalized**
Nature:	**05 Burn or scald (heat)**
Part of Body:	**18 Lower leg(s)**

Source of Injury:	**23 Heat (environmental or mechanical)**
Event Type:	**07 Rubbed or abraded**
Environmental Factor:	**11 Temperature above or below tolerance level**
Human Factor:	**09 Safety devices removed or inoperative**
Task:	**A Regularly Assigned**
Substance Code:	
Occupational Code	**766 - FURNACE, KILN AND OVEN OPERATORS**

Abstract:

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On November 13, 2013 at approximately 11:47 am, tree employees (Production Associates) had an injury (burns) when the pressurized chamber of a Low Pressure Die Cast Machine was opened and pressurized molten aluminum spilled out causing burns to all three workers. Tesla Motors, Inc. employs all three workers at 4550 Fremont Blvd. Fremont CA 94538. The injury took place in the Low Pressure Die Casting Department. The injured workers were transported to Santa Clara Valley Medical Center.

The employer reported the accident to Cal/OSHA on November 13, 2013 via phone.

Investigation into the accident began on November 13, 2013at approximately 2:30 pm. Opening conference was held with the Vice President of the Corporation. A team of employer representatives escorted the Division to the area where the accident occurred, photographs and measurements were taken. At the time of this investigation, the scene had been changed.

STATE OF CALIFORNIA

Jerry Brown, *Governor*

DEPARTMENT OF INDUSTRIAL RELATIONS
DIVISION OF OCCUPATIONAL SAFETY AND HEALTH
39141 Civic Center Dr. Suite 310
Fremont, CA. 94538
(510) 794-2521
FAX (510) 794-3889

☐ Fatality

Narrative Summary

Establishment Name: *Tesla Motors, Inc.*	**Inspection Number:** *315365395*
Management Contacted: *Steven Cooper*	**Title:** *Associate General Counsel*

Information on Injured — Covered by Workers Compensation Yes ☒ No ☐

Victim #1

Name: Jesus Navarro	**Occupation:** *Furnace Tech in training*
Address: [redacted]	
Phone Number: [redacted]	

Victim #2

Name: Kevin Carter	**Occupation:** *Team Leader*
Address: [redacted]	
Phone Number: [redacted]	

Victim #3

Name: Jorge Terrazas	**Occupation:** *Furnace Tech*
Address: [redacted]	
Phone Number: [redacted]	

Use additional form(s) as needed.

Witness Names and Title

Name and Title	Address	Phone Number
Dominic Drequito- LPDC Machine Operator Referred to as W1	[redacted]	
Jose Sanchez - Supervisor Referred to as W2		
Nicolas Garcia Referred to as W3		
Mark Young – Casting Production Manager Referred to as W4		
Kevin Hoffmann – Maintenance Supervisor Referred to as W5		

1. Location of accident:	*4550 Fremont Blvd. Fremont CA 94538*
2. Date Division was notified:	*November 13, 2013*
3. Date Division Arrived at Site:	*November 13, 2013*
4. Type of establishment	*Automobile Manufacturing Plant*
5. Manner how EE was injured/exposed:	*Workers opened a pressurized molten metal holder of a Low Pressure Die Casting Machine*
6. Hospital injured was taken to:	*Santa Clara Valley Hospital*
7. Type of injury or illness:	*2nd and 3rd degree burns*
8. Name of immediate supervisor:	*Jose Sanchez*

Form C-170-A (New 4-25-02)

Summary

The Employer
Tesla Motors, Inc.

The Victim
Victim #1 is a 31 year old male who started working for the company in 09/16/13 as a Furnace Technician in training in the Low Pressure Die Casting Department.

Victim #2 is a 32 year old male who has worked for the company since 8/20/12 and is currently a team leader in the Low Pressure Die Casting Department.

Victim #3 is a 33 year old male who started working for the company in 6/10/13 as Furnace Technician in the Low Pressure Die Casting Department.

The accident occurred at 4550 Fremont Blvd. Fremont CA 94538. The accident occurred at approx. 11:47 am. The victims were attempting to change a seal in the holding Furnace of the Low Pressure Die Casting Machine which contained pressurized molten aluminum metal. The chamber was opened prior to releasing the pressure in the unit. Molten Metal was released splattering the three victims, the victims' clothing caught fire, they stopped and rolled on the floor, removed the T-Shirt, victim #1 was assisted by Witness #3, the safety department called 911. The Fremont Fire Department arrived within 10 minutes approximately.

The Division arrived to the accident site the day of the accident (11/13/13) the employer was at the jobsite to meet with the Division. Compliance Engineer Noemi Herrera opened the investigation, Aniceto Magro was also present assisting with the investigation.

November 13, 2013 - The Division met with witness number one, two, four and five. Witnesses number four and five provided written statements.

December 3, 2013 - The division met with Victim number one.

December 11, 2013 - The Division met with Victim number three.

Victim #2 refused to meet with The Division.

Site Evaluation
The work site was an automobile manufacturing plant located at 4550 Fremont Blvd. Fremont CA 94538. The day of the initial investigation a stop order and an order prohibiting use was issued by the Division. The Low Pressure Die Casting Machine had molten aluminum spilled out of the holding furnace on to the machine and spread out on the floor approximately 40 ft.

Findings
Based upon evidence of written documents and oral statements during the course of the investigation, the employer was repairing a leak in the seal of the pressurized furnace holding in the Low Pressure Die Casting Machine. The casting press uses 10-20 psi air pressure to fill the cavity of the die.

The victims conducting the repair were furnace technicians, victim #1 was a new employee in training by the team lead (victim #2), and victim #3 was observing both workers standing behind them. Victim #2 asked Witness #1 (operator) to release the pressure, Witness #1 gave the victims a signal that the pressure was off and Victim #1 opened the clamp of the holding furnace.

The holding furnace was still pressurized when Victim #1 released the clamp, molten aluminum was approximately 1400 F degrees. The machine had been equipped with a safety interlock system which was supposed to be pulled prior to opening the chamber; however it was damaged and removed from the machine prior to the accident. All three victims had reported this problem to Witness #2 (supervisor) but the maintenance department was not aware of this problem. When victim #1 opened the clamp molten metal splattered all three victims, victims received 2^{nd} and 3^{rd} degree burns. Victim #1 stayed in the hospital for 20 days, received multiple burns to bilateral hands, stomach, hip, low back area and bilateral ankles. Victim #2 was admitted and released 5 days later, and victim #3 was released the same day

The victims were not using their complete Personal Protective equipment. They did not have a face shields or safety jackets on when working near the molten metal.

Witness #2 admitted to not having completed any written safety inspections of his department. He had not been trained or read the company's Injury and Illness Prevention Program (IIPP), and he had not trained the workers in his area about the elements of the IIPP.

Conclusion
The employer failed to ensure that the Low Pressure Die Casting Machine was maintained in a safe operating condition and allowed its employees to operate the machine while the safety interlock was broken.

The employer failed to ensure that the Low Pressure Die Casting Machine was de-energized before allowing its employees to conduct repair work.

The employer failed to ensure that employees exposed to burning hazards were utilizing appropriate Personal Protective Equipment.

The employer failed to ensure that a safety shield was used on the Low Pressure Die Casting Machine to prevent molten material from striking employees.

Regulatory Action

SERIOUS –Accident Related

Title 8 CCR section §3314. The Control of Hazardous Energy for the Cleaning, Repairing, Servicing, Setting-Up, and Adjusting Operations of Prime Movers, Machinery and Equipment, Including Lockout/Tagout.

(c) Cleaning, Servicing and Adjusting Operations.

Machinery or equipment capable of movement shall be stopped and the power source de-energized or disengaged, and, if necessary, the moveable parts shall be mechanically blocked or locked out to prevent inadvertent movement, or release of stored energy during cleaning, servicing and adjusting operations. Accident prevention signs or tags or both shall be placed on the controls of the power source of the machinery or equipment.

On and before November 13, 2013, the employer failed to release the air pressure used to inject molten aluminum into the molds, prior to servicing the Low Pressure Die Casting machine. As a result, on November 13, 2013, three employees were seriously injured when molten aluminum was projected through the sudden release of pressurized air while they were servicing the Low Pressure Die Casting machine.

Title 8 CCR section §3314. The Control of Hazardous Energy for the Cleaning, Repairing, Servicing, Setting-Up, and Adjusting Operations of Prime Movers, Machinery and Equipment, Including Lockout/Tagout.

(j) Training.

(1) Authorized employees shall be trained on hazardous energy control procedures and on the hazards related to performing activities required for cleaning, repairing, servicing, setting-up and adjusting prime movers, machinery and equipment.

On and around November 13, 2013, the employer failed to ensure that all employees were trained on hazardous energy control procedures and on the hazards related to performing activities required for cleaning, repairing, servicing, setting-up and adjusting prime movers, machinery and equipment, including the Low Pressure Die Casting machine. As a result, on November 13, 2013, three employees were seriously injured when molten aluminum was projected through the sudden release of pressurized air while they were servicing the Low Pressure Die Casting machine.

Title 8 CCR section §3328. Machinery and Equipment.
(c) Machinery and equipment with defective parts which create a hazard shall not be used.

On and before November 13, 2013, the employer failed to prevent employees from using the Low Pressure Die Casting Machine, which had a defective interlock bar creating a hazard. As a result, on November 13, 2013, three employees were seriously injured when molten aluminum was projected through the sudden release of pressurized air. The absence of the interlock allowed employees to open the lid without first releasing the air pressure.

Title 8 CCR section §3328. Machinery and Equipment.
(g) Machinery and equipment in service shall be maintained in a safe operating condition.

On and before November 13, 2013, the employer failed to ensure that the Low Pressure Die Casting Machine was maintained in a safe operating condition while it was in service, in that the safety interlock bar was not functioning and was ultimately removed. As a result on November 13, 2013 three employees were seriously injured when molten aluminum was projected through the sudden release of pressurized air. Because the interlock safety bar was not maintained, employees were able to open the lid without previously releasing the air pressure.

SERIOUS

Title 8 CCR section §3382. Eye and Face Protection.

(a) Employees working in locations where there is a risk of receiving eye injuries such as punctures, abrasions, contusions, or burns as a result of contact with flying particles, hazardous substances, projections or injurious light rays which are inherent in the work or environment, shall be safeguarded by means of face or eye protection. Suitable screens or shields isolating the hazardous exposure may be considered adequate safeguarding for nearby employees. The employer shall provide and ensure that employees use protection suitable for the exposure.

On and before November 13, 2013 the employer failed to ensure that employees working near the Low Pressure Die Casting Machine used suitable face and eye protection to safeguard them from the hazards of burns from molten aluminum.

Title 8 CCR section § 4265. Shields for Die Casting Machines.

Each die casting machine shall be shielded in a manner which will prevent molten material from striking employees.

On and before November 13, 2013, the employer failed to shield the Low Pressure Die Casting Machine in a manner which would prevent molten aluminum from striking employees.

GENERAL

Title 8 CCR section §3203. Injury and Illness Prevention Program.

(a) Effective July 1, 1991, every employer shall establish, implement and maintain an effective Injury and Illness Prevention Program (Program). The Program shall be in writing and, shall, at a minimum:

(4) Include procedures for identifying and evaluating work place hazards including scheduled periodic inspections to identify unsafe conditions and work practices. Inspections shall be made to identify and evaluate hazards.

(6) Include methods and/or procedures for correcting unsafe or unhealthy conditions, work practices and work procedures in a timely manner based on the severity of the hazard:

(A) When observed or discovered; and,

(B) When an imminent hazard exists which cannot be immediately abated without endangering employee(s) and/or property remove all exposed personnel from area except those necessary to correct the existing condition. Employees necessary to correct the hazardous condition shall be provided the necessary safeguards.

On and before November 13, 2013, the employer failed to effectively implement its Injury and Illness Prevention Program in that:

Instance 1: The employer failed to conduct scheduled periodic inspections to identify unsafe conditions and work practices relating to the use of the Low Pressure Die Casting Machine;

Instance 2: The employer failed to correct the unsafe conditions/ work practice, of allowing employees to continue operating the Low Pressure Die Casting machine after the safety interlock on the holding furnace of the Die Casting Machine had been damaged and removed.

Title 8 CCR section §3314. The Control of Hazardous Energy for the Cleaning, Repairing, Servicing, Setting-Up, and Adjusting Operations of Prime Movers, Machinery and Equipment, Including Lockout/Tagout.

(g) Hazardous Energy Control Procedures. A hazardous energy control procedure shall be developed and utilized by the employer when employees are engaged in the cleaning, repairing, servicing, setting-up or adjusting of prime movers, machinery and equipment.

On and before November 13, 2013, the employer failed to develop and ensure the utilization of hazardous energy control procedures for the repairing and servicing of the Low Pressure Die Casting Machine.

	Official	Title	Date
Prepared by:	Noemi Herrera [redacted]	Associate Safety Engineer	2/28/14
Reviewed by:	Michael Frye	District Manager	2/28/14
Reviewed by:	Chris Grossgart	Regional Manager	
Reviewed by:	Cora Gherga	Deputy Chief	