

STATE OF CALIFORNIA  
DEPARTMENT OF INDUSTRIAL RELATIONS  
OCCUPATIONAL SAFETY AND HEALTH STANDARDS BOARD  
2520 Venture Oaks Way, Suite 350  
Sacramento, California 95833  
(916) 274-5721

In the Matter of a Petition by: )  
) )  
Ronald L. Rudolph )  
Adjunct Industrial Technology Instructor )  
Institute of Technology )  
564 W. Herndon Avenue )  
Clovis, CA 93612 )  
) )  
Applicant. )

PETITION FILE NO. 551  
DECISION

The Occupational Safety and Health Standards Board hereby adopts the attached  
PROPOSED DECISION.

Board Member	Aye	No	Abstain	Absent
Dr. Blink	X			
Mr. Harrison	X			
Ms. Quinlan	X			
Ms. Smisko	X			
Ms. Stock	X			
Chairman Thomas	X			

By: Marley Hart  
Marley Hart, Executive Officer

DATE: 1/21/2016  
Attachments

**OCCUPATIONAL SAFETY  
AND HEALTH STANDARDS BOARD**

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**PROPOSED PETITION DECISION OF THE  
OCCUPATIONAL SAFETY AND HEALTH STANDARDS BOARD  
(PETITION FILE NO. 551)****INTRODUCTION**

The Occupational Safety and Health Standards Board (Board) received a petition on August 27, 2015, from Mr. Ronald L. Rudolph, (Petitioner). The Petitioner requests the Board amend Title 8, California Code of Regulations, to require an AC Gauss meter (magnetometer) as an aid to ensure employees comply with the safe approach distances tabulated within Section 2940.2.

Labor Code section 142.2 permits interested persons to propose new or revised regulations concerning occupational safety and health and requires the Board to consider such proposals, and render a decision no later than six months following receipt. Further, as required by Labor Code section 147, any proposed occupational safety or health standard received by the Board from a source other than the Division of Occupational Safety and Health (Division) must be referred to the Division for evaluation, and the Division has 60 days after receipt to submit an evaluation regarding the proposal.

**SUMMARY**

The Petitioner requests the Board to consider requiring a magnetometer as an aid to ensure employees comply with the safe approach distances tabulated within Section 2940.2. The Petitioner takes the position that a magnetometer could avoid future instances of accidental contact with energized high voltage power lines. Such a device would provide an audible or a visual warning when an employee is in danger of contacting energized high voltage power lines. Employees would wear the device, if small enough; otherwise, employers would affix larger devices to vehicles that are capable of contacting energized high voltage power lines. The Petitioner provides no specific regulatory language for the Board to consider. Attempts to contact the Petitioner have been unsuccessful.

**DIVISION'S EVALUATION**

The Division, in their evaluation dated, November 19, 2015, recommended DENIAL of Petition 551. The Division recommended that magnetometers not be allowed as a means to protect employees from the hazards of accidental contact with high voltage conductors. The Division's analysis raises concerns that magnetometer based systems are less effective than electric field based detection systems. The Division also points out the National Institute of Occupational Safety and Health already evaluated electric field based detection systems and did not

recommend those systems as a sole means to prevent inadvertent contact with high voltage conductors.

### STAFF'S EVALUATION

There are no magnetometer based warning devices known to Board staff that would reliably accomplish the Petitioner's stated safety objective. Put simply, magnetometer based warning systems do not appear to be effective. The Petitioner believes that a 'calibrated' magnetometer would detect the presence of a power line thereby alerting the employee to take appropriate action to avoid power line contact.

Any device an employee would rely upon to ensure they maintain a safe distance from an energized high voltage line must be stable and consistent. Magnetometer based warning systems rely on the detecting strength of the magnetic field emanating from a power line. There is an equation for determining the distance from the magnetometer to the magnetic source (power line). The equation relates the magnetic field strength to the distance from its source and the amount of electric current flowing through a power line. Unfortunately, it would be impossible to know the amount of electric current flowing through a power line at any given time. The voltage is consistent, fluctuating in a narrow band, but the current fluctuates with the demand for more or less electricity throughout the day. Since the current in the power line would vary throughout the day, the strength of the magnetic field would vary as well. Staff could not identify an effective means to 'calibrate' such a device to provide an employee any reliable warning. An increase in the power demand within the power line could be sufficient to trigger an alarm without movement of an employee toward the power line. In the worst-case scenario, the device may not alarm until an employee had already crossed the safe working distance outlined in Title 8.

Board staff discussed the Petitioner's request with the Division and evaluated the request in detail including subject matter literature relevant to the request. Board staff recommends the Petitioner's request be denied.

### CONCLUSION AND ORDER

The Occupational Safety and Health Standards Board has considered the petition of Mr. Ronald L. Rudolph, to require a magnetometer as an aid to ensure employees comply with the safe approach distances tabulated within Section 2940.2. Having carefully read and considered the petition, Division Evaluation, and Board Staff Evaluation, the petition is hereby DENIED.