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Cynthia T. Brown, Chief

Section of Administration

Surface Transportation Board

395 E Street S.W. Room 100

Washington D.C. 20004

RE: Finance Docket No 35724_01. California High Speed Rail Authority- Construction Exemption- In Fresno, Tulare, and Kern Counties, CA.

I have just become aware of a recent filing with the CPUC that seems of particular relevance to this case. In the discussion section, it is written, "At party workshops designed to discuss the technical support for the proposed General Order, the California High Speed Rail Authority ("CHSRA") failed to present sufficient studies or evidence that its electrification systems will not interfere with freight railroad systems. Union Pacific and BNSF request the Commission to order further technical workshops to address unanswered safety issues before proceeding to the second phase of the rulemaking."

The issues raised in this filing appear to be squarely in the STB's scope as it relates to at least the following components of the transportation policy in 49 CFR 10101:

(3)to promote a safe and efficient rail transportation system by allowing rail carriers to earn adequate revenues, as determined by the Board;

(4)to ensure the development and continuation of a sound rail transportation system with effective competition among rail carriers and with other modes, to meet the needs of the public and the national defense;

(5)to foster sound economic conditions in transportation and to ensure effective competition and coordination between rail carriers and other modes;

(9)to encourage honest and efficient management of railroads.

I am attaching a copy for your Board to review.

Sincerely,

Carol Bender

Carol Bender

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Bakersfield, CA 93314

BEFORE THE PUBLIC UTILITIES COMMISSION

OF THE STATE OF CALIFORNIA

Order Instituting Rulemaking Regarding Whether to Adopt, Amend, or Repeal Regulations Governing Safety Standards for the Use of 25kV Electric Lines to Power High Speed Trains	R. 13-03-009

JOINT COMMENTS OF UNION PACIFIC RAILROAD COMPANY AND BNSF RAILWAY COMPANY TO THE TECHNICAL PANEL REPORT

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January 31, 2014

TABLE OF CONTENTS

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JOINT COMMENTS OF UNION PACIFIC RAILROAD COMPANY AND BNSF RAILWAY COMPANY TO THE TECHNICAL PANEL REPORT

I. INTRODUCTION

Pursuant to Rules 12.4 and 14.3 of the California Public Utilities Commission's ("CPUC") Rules of Practice and Procedure, Union Pacific Railroad Company ("Union Pacific") and BNSF Railway Company ("BNSF") jointly submit these comments on the "Technical Panel Report of the Safety and Enforcement Division" and the proposed General Order attached thereto.

II. DISCUSSION

At party workshops designed to discuss the technical support for the proposed General Order, the California High Speed Rail Authority ("CHSRA") failed to present sufficient studies or evidence that its electrification systems will not interfere with freight railroad systems. Union Pacific and BNSF request the Commission to order further technical workshops to address unanswered safety issues before proceeding to the second phase of the rulemaking.

The California High-Speed Train Project ("CHSTP") is a project that has been defined by its uncertainty: uncertainty about when construction will start, how it will be paid for,[1] where it will run, and how it will achieve its statutory performance requirements. This proceeding is adding to the list of uncertainties and creating the probability that the project will cause unreasonable safety risks and conflicts with other railroad systems.

"[T]here is no railroad in operation in the U.S. that utilizes the new technologies that will be employed on the California High Speed Rail system."[2] As such, the CPUC expressly stated its intent to carefully regulate the CHSTP to "protect the public and the environment."[3] When it is completed, the CHSTP will be part of a large rail infrastructure within the state.[4] To operate efficiently and safely, this infrastructure depends on complex railroad signal systems that must be fully operable at all times. The CPUC should not adopt safety rules that impact the integrity of existing railroad systems without determining with certainty that all technical and safety issues have been resolved. Further technical workshops are needed to explore the degree to which the CHSTP's electrification systems will create interference with conventional freight signal and Positive Train Control ("PTC") systems, as well as minimum clearances between the CHSTP and other rail systems, before proceeding to the second phase of this rulemaking.

A. Further Technical Workshops Should Be Held To Address Risks For Electromagnetic Interference With Conventional Freight Railroad Signal Systems

The CHSRA acknowledges that power systems naturally create electric and magnetic fields ("EMFs") that can cause an electromagnetic interference ("EMI") that impedes the functioning of other systems.[5] Prior to this rulemaking, the CHSRA recognized that EMI from its electrification systems could interfere with nearby freight railroad signal systems.[6] It stated:

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[1] *See Tos, Fukuda, County of Kings v. California High Speed Rail Authority*, Case No. 34-2011-00113919-CU-MC-GDS (Sacramento Sup. Ct., Nov. 25, 2013) (pending bond validation proceeding).

[2] *See* California Public Utilities Commission, 2012 Annual Report, 33-34 (Feb. 1, 2013), available at http://www.cpuc.ca.gov/NR/rdonlyres/E47E6D16-C37F-446B-B606-924378794A14/0/CPUC2012AnnualReport.pdf (hereafter "Annual Report").

[3] *Id*. at 34.

[4] *Id*. at 28-37.

[5] California High-Speed Train Project EIR/EIS, Merced to Fresno Section, Chapter 3.5: *Electromagnetic Fields and Electromagnetic Interference*, 3.5-1, available at

> The high electrical currents flowing in the overhead contact system and the return currents in the overhead negative feeder, high speed train tracks, and ground could induce 60-Hz voltages and currents in existing parallel railroad tracks. If an adjoining freight railroad track parallels the HST track for a long enough distance (i.e., several miles), the induced voltage and current in the adjoining freight railroad tracks could interfere with the normal operation of the signal system, thereby indicating that there is no freight train present when, in fact, a train is present, or thereby indicating that a train is present when, in fact, no train is present.[7]

These disruptions would undoubtedly impact "safe and dependable operation of the adjacent railroad signal system, resulting in train delays or hazards, or disruption of road crossing signals."[8]

Over twelve thousand at-grade crossings exist within California's rail network.[9] To manage the safety at these crossings, the CPUC developed a rail safety program staffed by specialists in "signal and train control."[10] But discussion at the technical workshops only briefly focused railroad signals, and the CHSRA has not assured Union Pacific and BNSF that its project will not threaten crossing safety.

To address this safety risk, Union Pacific proposed rules to require the CHSRA to mitigate EMI with nearby rail facilities.[11] CHSRA responded by stating that potential for such interference does not exist, but it did not offer definitive studies or evidence to support this conclusion. The CHSRA then revised mitigation language in a way that does not adequately address the risk of a freight signal failure. If there is a loss of communication among any

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http://www.hsr.ca.gov/Programs/Environmental_Planning/final_merced_fresno.html (Apr. 2012).

[6] *Id*. at 3.5-16.

[7] *Id*.

[8] *Id*.

[9] Laura Melendy and Mark Hood, *Tracks, Trains and Automobiles: Safety at Railroad Grade Crossings*, available at http://techtransfer.berkeley.edu/newsletter/04-4/tracks.php (hereafter "Melendy and Hood").

[10] *See* Annual Report, *supra*, at 29-30; *see also* Melendy and Hood, *supra*, (California ranks fifth in the nation in the number of highway-rail grade crossing collisions, and third in the nation in the numbers of fatalities and injuries at at-grade crossings.)

[11] *Compare* Union Pacific's Proposed Cooperation Language (incorporated hereto as Appendix A), *with* Proposed General Order Sec. 1.3-1.5.

existing freight signal systems the integrity of at-grade crossing systems will be compromised, putting the general public at risk. Additional technical review with experts in railroad signal systems should explore the risks of EMI and determine what rules should be adopted to prevent interferences with existing freight signal systems.

B. Further Technical Workshops Should Be Held To Address Electromagnetic Interference With Federally-Mandated Positive Train Control ("PTC") Systems.

On September 12, 2008, a Metrolink passenger train collided head-on with a Union Pacific freight train in Chatsworth, California.[12] Twenty-five people died and more than one hundred were injured. An investigation showed that the accident happened because the operator of the Metrolink train ignored a red signal that required him to remain stopped in a station. The operator was exchanging text messages with a rail enthusiast immediately before the accident.

Congress responded to the Chatsworth accident by passing a bill that requires the nation's railroads to install Positive Train Control ("PTC") on more than 60,000 miles of track by the end of 2015.[13] PTC is an automated system that will stop a train to prevent it from bypassing restrictive signals.[14] A functioning PTC system that is interoperable among all railroads will avoid accidents due to human error in responding to signals.[15]

But what Congress mandated did not exist at the time. Since enactment of the law, the nation's railroads have spent more than $2.7 billion of their own funds to create and implement the technology. Despite the dedication of these resources, it will not be possible to meet the 2015 deadline. The scale of design, permitting, manufacturing, and installation of a system that relies on thousands of wayside communication poles, tens of thousands of radio communication and GPS units, and numerous other components simply makes meeting the schedule impossible except possibly in specific locations.

In the midst of this, CHSRA wants the Commission to approve safety rules for installation of 25kV overhead electrical systems to power trains that will travel in excess of 200 m.p.h. One of the most important questions to address in this proceeding is how to ensure that

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[12] Positive Train Control Systems, 75 Fed. Reg. 2598-01, *2602 (Jan. 15, 2010).

[13] Railroad Safety Improvement Act, Pub. L. No. 110-432, 122 Stat. 4848 (2008).

[14] *See* 49 C.F.R. §236, subparts H-I.

[15] *See* 49 U.S.C.A. §20157(a)(2), (i)(1) (all PTC systems must be interoperable).

placing such high-voltage and dynamic facilities in proximity to conventional railroad facilities will not create electromagnetic fields or other conditions that interfere with PTC systems.

PTC is designed to prevent train-to-train collisions, derailments, and improperly lined switches, as well as to warn locomotive engineers of restrictions at at-grade crossings and protect maintenance workers.[16] Its fail-safe condition will be to stop a train. This means that if there is a loss of communication among any of the PTC components, trains will stop. Nothing at the technical panel workshops addressed this risk, and nothing in the proposed rules speaks to how this type of failure will be handled. If the Commission approves rules without knowing what the possible conflicts between PTC and the proposed high-speed electrical facilities are, it will risk creating a condition where the rail network in California is inoperable. This will not only impact California's economy, but will also interfere with a federal mandate. Additional technical review with experts in the area of PTC is necessary to explore these risks.

C. Further Technical Workshops Should Address Minimum Clearances Between CHSTP Electrified Systems And Conventional Railroad Systems

General Order 26-D establishes, among other things, minimum side and vertical clearances, minimum clearances between parallel tracks, and rules relating to conditions and obstructions adjacent to freight railroad tracks. Nothing in General Order 26-D establishes minimum clearances to freight railroad networks where passenger trains will reach speeds proposed by the CHSTP. Nothing in General Order 26-D establishes minimum clearances where electrification systems will create EMI that could interfere with existing freight railroad signal systems. Similarly, nothing in the proposed General Order covers these subject areas. Additional technical review should explore whether it is necessary to adopt rules that establish minimum clearance values between the CHSTP's electrified system and existing freight systems.

D. Railroad-Specific Technical Workshops Should Address The Proposed Safe Working Practices.

Section eight of the proposed General Order contains rules relating to Safe Working Practices. These rules apply not only to the CHSRA's employees, but also to third parties working on or near the CHSTP right-of-way. As written, the rules could be interpreted to give the CHSRA rulemaking authority over freight railroad workers. This is an area of railroad safety

[16] 49 C.F.R. §236.1005.

that is not only covered by federal rules,[17] but also by existing labor agreements. Railroad unions are not parties to this proceeding and have not been present at technical workshops. Since the CHSTP will operate parallel to freight networks for potentially hundreds of miles, it is critical that discussion regarding railroad safety rules includes railroad union and labor representatives.

E. The Scope of the Rulemaking Must Be Clarified.

In its petition, the CHSRA requested the CPUC to institute rulemaking to establish safety rules for electrical systems for the CHSTP.[18] As described in the petition, the proposed rules will cover the operation of high-speed trains in both dedicated and shared rights-of-way.[19] Contrary to its petition, the CHSRA represented to all parties at the first scheduled workshop that it only sought to develop rules for those segments of its plan where high-speed trains will operate over a dedicated right-of-way. The CHSRA claimed that those segments where the CHSTP will share track with other passenger or freight trains, are not covered by the proposed rules. Despite these representations, the CHSRA has not formally amended its petition.

At the technical workshops, the railroads engaged in detailed conversation regarding the purpose and scope of the proposed rules, as well as the definition of "dedicated," "exclusive," or "high speed" rights-of-way. Notwithstanding these conversations, there remain internal inconsistencies within the proposed General Order.[20] More specifically, the title of the proposed General Order, along with the definition of the "high speed rail right-of-way," leaves open the potential that the proposed rules will apply where the CHSTP will exist in a shared right-of-way. For instance, there are portions of the CHSTP where high-speed trains will share a right-of-way with Metrolink, Amtrak, Caltrain, or Union Pacific and BNSF freight trains. Metrolink and Amtrak are not parties to this proceeding, and have not participated in any of the technical workshops. Even without their participation, it remains unclear if the proposed rules will be sufficient for high-speed train operation in shared rights-of-way. If the CHSRA does not amend its petition to clearly state the intended scope of the rulemaking, the Commission should order

[17] *See* 49 U.S.C.A. §20108(a) ("The Secretary of Transportation shall carry out, as necessary, research, development, testing, evaluation, and training for every area of railroad safety."); *see also* 49 C.F.R. §§240, 242.

[18] Petition at 1.

[19] *Id*. at 7, 9, 13.

[20] *See* Title and Sections 1.1, 1.2, and 2.22.

further workshops to ensure that the proposed rules are carefully vetted out for application in shared rights-of-way.

III. CONCLUSION

Whether the proposed General Order will be sufficient to address key areas of railroad safety remains uncertain. Further technical review is needed to ensure that conventional freight signal systems and PTC systems are not impaired by EMI from the CHSTP. Additionally, the proposed General Order should prescribe certain minimum clearances between the CHSTP and other railroad systems, and it will be impossible to do so if the Commission is not certain where the CHSTP will exist. For all of these reasons, it would be premature to advance this rulemaking to the second phase. There is nothing in the CHSRA's current construction timeline that suggests an imminent need for these rules.[21] The Commission has time to carefully scrutinize these safety rules to ensure that the public safety is not compromised. For all of these reasons, Union Pacific and the BNSF renew their request for a third technical panel for freight railroads.[22]

Respectfully submitted,

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[21] *See* California High-Speed Rail Program, Revised 2012 Business Plan at pg. 14 (construction on the first operating segment will not begin until 2018).

[22] *See* Joint Motion of Union Pacific and BNSF To Amend Preliminary Scoping Memo, filed on August14, 2013.

Appendix A

Union Pacific's Proposed Cooperation Language

Proposed Section 1.3: Design, Construction, Operation, and Maintenance

High speed railroad electrification systems should be designed and constructed for their intended use, regard being given to the conditions under which they are to be operated. Any party contemplating or having existing longitudinal construction of high speed railroad facilities adjacent to, or in close proximity of, other conductive facilities, such as rail, pipeline, or cable, shall use all reasonable means to operate and maintain the electrified systems in such a manner as to minimize electromagnetic interference (EMI) and earth currents under conditions of normal operation, and to avoid transient disturbances.

Proposed Section 1.4: Avoidance Or Mitigation Of Electromagnetic Interference

(a) Co-operation

High speed railroad electrification systems may create EMI and ground currents that cause hazardous voltage, disturbance of railroad signal and communication circuits, or disruption of cathodic protection, of nearby conductive facilities such as rail, pipeline, or cable. Any party contemplating or having existing longitudinal construction of high speed railroad facilities adjacent to, or in close proximity of, other conductive facilities, such as rail, pipeline, or cable, or expects or experiences interference from high speed railroad EMI voltages, shall confer with the entity that may be the source of the EMI voltages. The parties shall cooperate, to the extent practicable, to determine the cause of such interference, and to develop mitigation to avoid, eliminate, or minimize the interference to a level that allows safe and reliable operation of the disturbed facility and meets all requirements of regulating agencies.

(b) Principle of Least Cost

When there are two or more different practicable methods of avoiding or mitigating interference, the method which involves the least total cost shall in general be adopted irrespective of whether the necessary changes are made in the facility of the high speed railroad or in the facility of the other nearby party; provided, however, that preference shall be given to methods of avoiding an interference over methods of mitigating interference; and provided,

further, that as between different methods of mitigation having different degrees of effectiveness, the most effective, the cost of which can be justified, shall be adopted.

Proposed Section 1.5: Commission Resolution

Any party unable to satisfactorily resolve its concerns regarding EMI interference may request resolution by the Commission.