Maurice Arcangeli Director Government Relations Direct Dial: (856) 488-3115 Fax: (856) 488-8669 E-mail: <u>marcangeli@subaru.com</u>

> June 24, 2010 Ref. No.: GR10-017

Mr. Daniel C. Smith Associate Administrator for Enforcement, NVS-200 National Highway Traffic Safety Administration Room W 45-306 1200 New Jersey Ave. SE Washington, DC 20590

<u>RE: Part 573 Defect Information Report – Open Circuit of Steering Roll Connector on 2010</u> <u>Subaru Legacy & Outback</u>

Dear Mr. Smith,

In accordance with 49 CFR Part 573 Defect and Noncompliance Responsibility and Reports, Fuji Heavy Industries USA, Inc. on behalf of Subaru of America, Inc. and Fuji Heavy Industries, Ltd., submits the enclosed notification and report concerning a defect in the steering roll connector on certain 2010 model year Subaru Legacy and Outback vehicles sold in the United States. Our internal designation for this recall campaign will be: WVR-28. This submission completes the initial DIR which was submitted on 6/22/2010.

If you have any questions on the enclosed report, please contact me.

Sincerely,

Fuji Heavy Industries USA, Inc.

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Maurice Arcangeli, Director Government Relations

Enclosure

cc: Fuji Heavy Industries, Ltd. (Japan) Subaru of America, Inc. (Cherry Hill, NJ)

Defect Information Report (49 CFR Part 573.6)

573.6(c)(1) - Manufacturer's Name

Vehicle Fabricating Manufacturers:

Fuji Heavy Industries, Ltd. ["FHI"] 1-7-2 Nishi-Shinjuku Shinjuku-ku Tokyo 160-8316, Japan

Subaru of Indiana Automotive, Inc. ["SIA"] 5500 State Road 38 East Lafayette, Indiana 47903

Designated U.S. Agency:

Fuji Heavy Industries USA, Inc. 2235 Rt. 70 West Cherry Hill, NJ 08002

573.6(c)(2)(i) - Identification of Vehicles Containing the Defect

Based on vehicle production records, we have determined from production dates that the recall affected passenger car population is as follows:

Make:	Subaru	
Model Year(s):	'ear(s): 2010	
Model(s):	Legacy & Outback Vehicles	
Production Dates:	ction Dates: February 16, 2009 through April 12, 2010	
VIN Ranges:	2010 Legacy: A*210001 - A*244529	
(Last 8 Digits)	2010 Outback: A*310001 - A*377827	
	Note 1: Although the involved vehicles are within the above VIN ranges, not all vehicles in these ranges were sold in the U.S. Note 2: Not all vehicles in these ranges are affected. Note 3: Various characters occupy the VIN positions identified by "*".	

573.6(c)(3) - Total Number of Vehicles Potentially Containing the Defect

Model	Year	Number of Vehicles Potentially Involved
Legacy	2010	25,566
Outback	2010	<u>48,132</u>
	TOTAL	73,698

573.6(c)(4) - Percentage of Vehicles Estimated to Actually Contain the Defect

It is not possible to determine an estimated percentage. We have received nine technical reports of the problem from other markets. No injuries or deaths are involved in the reports.

573.6(c)(5) - Description of the Defect

(1) Technical reports that FHI received from other markets indicated illumination of the airbag warning light, impossible operation of paddle shift, steering wheel radio, cruise control and/or no sounding of horn. The problems are caused by broken lead wire(s) in the flat cable of steering roll connector.



(2) Cause of the Defect

On certain flat cables of the steering roll connector, chemical stress cracking may occur on the cable surface due to manufacturing dispersion of grease which is applied to the cable during the assembling process of the roll connectors. The grease that was used in these particular roll connecters contained higher than normal high free alkali which can damage the copper laminate on the flat cable. With continual use of the roll connector a crack may develop and disrupt the electrical circuits. Possible circuits affected are the driver's frontal airbag, paddle shifter function, cruise control, horn control and radio functions. Over a period of time the grease can creep and affect one or a combination of the circuits. Chemical stress will not occur after 100 hours of steering roll connector storage regardless of free alkali amount and humidity condition. Even if the initial alkali density is high, it will dissipate to far less than 0.07% with elapse of 100 hours under any atmosphere conditions. This unique characteristic of the grease was difficult to determine and took some investigative time to find out.

573.6(c)(6) - Chronology of Principal Events

October 1, 2009: FHI received an initial field technical report from the domestic market in Japan. The report indicated the air bag warning light turned on.

October 2, 2009: FHI started investigating the report including the returned part collected from the Japanese market.

November 23, 2009: FHI received the investigation report from the supplier that the specific problem was not found. FHI believed the problem of the initial technical report was an isolated malfunction.

FHI received additional 8 technical reports from Japan and overseas markets thereafter from October 7, 2009 to March 31, 2010.

March 31, 2010: FHI started to obtain reports of investigation results of returned claim parts from the supplier that the problem was not isolated and it might occur more in the future. FHI found the reason of the malfunction is a circuit crack of flat cable by a chemical stress.

April 27, 2010: FHI concluded its initial investigation and determined that it will conduct a service campaign as a non-safety issue since the initial problem may occur more often in the market and customer would recognize the warning light and have the steering roll connector replaced at dealer immediately.

May 12. 2010: FHI found the cause of chemical stress crack was related to the unique characteristic of the grease, that regardless of free alkali amount, 100 hours after steering roll connector assembly and humidity conditions chemical damage will not occur.

June 15, 2010: FHI investigated the issue further and learned that the open circuit of the airbag in the flat cable may also occur more in the future and therefore reached a conclusion that this condition relates to motor vehicle safety; accordingly, FHI has decided to conduct a recall campaign.

The investigation took time because the malfunctions varied from the different field reports making it difficult to determine the root cause. Returned parts from the field made it difficult to determine the total cause of the malfunctions.

573.6(c)(8) - Description of the Manufacturer's Remedy Program

(i)

The remedy plan calls for dealers to check lot number of the steering roll connector. The roll connector will be replaced with a new one if the lot number showed any affected range of the failure occurrence.

(ii)

Subaru of America, Inc. expects to notify U.S. dealers around, June 23 2010 and include complete inspection and repair instructions. Owner notices are expected to be mailed on or around, July 1 2010.

573.6(c)(10) - Submission of Recall Communications

Fuji Heavy Industries USA, Inc. will provide copies of all notices, bulletins and other recall related communications within 5 days after their distribution.

573.6(c)(11) - Manufacturer's Campaign Number

Our identification code for this recall campaign will be: WVR-28.

577.5(a) - Submission of Owner Notification Letter

A copy of the owner notification letter will be submitted to NHTSA's Recall Management Division at least 5 days prior to mailing.