LATHAM & WATKINS LLP

June 16, 2011

VIA EDGAR AND OVERNIGHT DELIVERY

Loan Lauren P. Nguyen Special Counsel Division of Corporation Finance United States Securities and Exchange Commission 100 F Street, N.E. Washington, D.C. 20549

Re: Allison Transmission Holdings, Inc.
Amendment No. 2 to Registration Statement on Form S-1
Filed May 13, 2011
File No. 333-172932

Dear Ms. Nguyen:

On behalf of our client, Allison Transmission Holdings, Inc., a Delaware corporation (the "Company"), and pursuant to the applicable provisions of the Securities Act of 1933, as amended, and the rules promulgated thereunder, please find enclosed for filing with the Securities and Exchange Commission (the "Commission") a complete copy of Amendment No. 3 ("Amendment No. 3") to the above-captioned Registration Statement on Form S-1 of the Company filed with the Commission on March 18, 2011, as amended by Amendment No. 1 filed with the Commission on April 26, 2011 ("Amendment No. 1") and Amendment No. 2 filed with the Commission on May 13, 2011 ("Amendment No. 2") (collectively, the "Registration Statement").

This amendment reflects certain revisions of the Registration Statement in response to the comment letter to Mr. Eric C. Scroggins, the Company's Vice President—General Counsel and Secretary, dated May 27, 2011, from the staff of the Commission (the "Staff"). For your convenience we are also providing copies of Amendment No. 3, marked to show changes against Amendment No. 2, in the traditional non-EDGAR format to each of Chanda DeLong and you.

The numbered paragraphs in italics below set forth the Staff's comments together with the Company's response. Unless otherwise indicated, capitalized terms used herein have the meanings assigned to them in the Registration Statement.

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Leverage Our Efficient Cost Structure, page 8

1. We note the disclosure regarding your substantial indebtedness and net losses elsewhere in the prospectus. However, you describe your cost structure as "efficient." Please revise here, the risk factor entitled, "We could be materially adversely affected by any failure to maintain cost controls" and throughout the prospectus accordingly.

Response: The Company has revised the disclosure on pages 8 and 27 of Amendment No. 3 in response to the Staff's comment to remove the term "efficient" with respect to the Company's cost structure and to note the Company's indebtedness and net losses when discussing the Company's cost structure.

Services Agreement, page 111

2. We note your response to our prior comment 18 and reissue. Although we note your assertion that the management agreement "is not significant to the operations of the Company," and will be terminated in connection with the offering, the agreement is with your two majority stockholders, who are also the selling stockholders listed in the registration statement. In addition, these parties will be paid a \$16 million termination fee pursuant to the agreement. Please either file the services agreement or provide a more thorough legal and factual analysis as to why the agreement does not need to be filed.

Response: The Company has filed the Services Agreement as Exhibit 10.18 in response to the Staff's comment.

Senior Notes and the New Notes Held by Executive Officers, page 112

3. We note your disclosure on page 38 that certain of your executive officers will receive net proceeds of the offering in connection with the repayment of the Senior Cash Pay Notes. Please revise this section to disclose the amount of Senior Cash Pay Notes owned by each named executive officer, as opposed to presenting the aggregate value of all notes owned.

Response: The Company has revised the disclosure on page 112 of Amendment No. 3 in response to the Staff's comment to disclose the amount of Senior Cash Pay Notes owned by each named executive officer.

Principal and Selling Stockholders, page 113

4. Please disclose that the selling stockholders may be deemed underwriters in connection with the transaction.

Response: The Company has revised the disclosure on page 113 of Amendment No. 3 in response to the Staff's comment to disclose that the selling stockholders may be deemed underwriters in connection with the offering.

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Description of Capital Stock, page 117

5. Please remove the legal conclusion that all of your outstanding common stock are "fully paid and non-assessable" or attribute the statement to counsel.

Response: The Company has revised the disclosures on page 117 of Amendment No. 3 in response to the Staff's comment to remove references to the Company's outstanding common stock being fully paid and non-assessable.

Exhibit 5.1, Opinion of Counsel

6. We note the statement that counsel is opining on the "General Corporation Law" of the State of Delaware. Please have counsel confirm to us that the opinion opines upon Delaware law including all applicable statutory provisions and all applicable reported judicial decisions interpreting those laws.

Response: In response to the Staff's comment, we confirm that our Exhibit 5.1 opinion opines upon Delaware law, including all applicable statutory provisions and all applicable reported judicial decisions interpreting those laws.

7. Counsel conditions its opinion on the assumption that the securities will be delivered to the underwriters at a price per share not less than the per share par value of the Common Stock. Please remove this assumption as it is inappropriate.

Response: In response to the Staff's comment, we have removed the assumption that the securities will be delivered to the underwriters at a price per share not less than the per share par value of the Common Stock.

8. Please delete the assumption that the "[c]ompany will comply with all applicable notice requirements regarding uncertificated shares," as it is inappropriate.

Response: In response to the Staff's comment, we have removed the assumption that the Company will comply with all applicable notice requirements regarding uncertificated shares.

. Please delete the sentence that begins "[t]his opinion is for your benefit," as it inappropriately limits reliance on the opinion.

Response: In response to the Staff's comment, we have removed the sentence that begins "[t]his opinion is for your benefit."

Exhibit 10.17, Second Amendment to the Credit Agreement

O. Please revise to file Exhibits B and D to this agreement or advise.

Response: The Company has refiled the Second Amendment to the Credit Agreement, including Exhibits B and D.

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We hope that the foregoing has been responsive to the Staff's comments and look forward to resolving any outstanding issues as quickly as possible. Please do not hesitate to contact me at (202) 637-2139 or my colleague, Jason M. Licht, at (202) 637-2258 with any questions or further comments you may have regarding this filing or if you wish to discuss the above.

Sincerely,

/s/ Rachel W. Sheridan Rachel W. Sheridan of LATHAM & WATKINS LLP

Enclosures

ec: (via fax)

Eric C. Scroggins Chanda DeLong