

MONSANTO COMPANY  
St. Louis, Missouri

November 9, 1971

cc: ~~CONFIDENTIAL~~  
T. L. Gossage - B2SL  
J. P. Herber - T3G  
L. R. Stark - W4A  
W. R. Richard - T3A  
D. W. Stegen - 1460  
H. R. Ford - 1070

CALL REPORT NO. 1971-22

COLUMBIA GULF TRANSMISSION CO.  
Houston, Texas

Date of Call:

November 4, 1971

Present for Columbia Gulf:

Mr. Richard Lambert (Operations)  
Mr. Herb Van Dyne (Purchasing)  
Mr. Grave (Purchasing)

Present for Monsanto:

C. L. Bradford  
D. W. Stegen  
R. E. Hatton

Summary:

Because of the high loss of Turbinol 153 through the seals of new Ingersoll Rand natural gas compressors, Columbia Gulf has replaced it with Fyrquel 150. A review of the problem indicates that no known reason exists for the high consumption of Turbinol 153 compared to Fyrquel 150. It was Monsanto's contention that the high experience factor on Turbinol 153 indicated that it was a workable product in similar units. It was agreed that Monsanto would accept all unused fluid for credit and that questions concerning the disposition of used fluid and expenses involved with this problem would be resolved at a later meeting. It was further agreed that Monsanto would discuss this problem further with Ingersoll Rand. Columbia Gulf indicated an interest in further work with Monsanto and appeared receptive to a discussion of the new phosphate ester fluids at some future date.

Details:

This visit was made at the direct request of the Purchasing Department of Columbia Gulf for an immediate meeting with Monsanto personnel. The stated purpose was to review Columbia Gulf problems with Turbinol 153 in new gas turbine/natural gas compressor units. These problems involve exceptionally high fluid losses.

The early part of the meeting was devoted to a review of problems with the use of Turbinol 153 in the new units at Stanton, Kentucky, at Delhi, Louisiana and at Inverness, Mississippi. Brief mention was made of the visits of Monsanto personnel to Stanton and to Delhi. Mr. Lambert

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updated those present on the current status of the problems. He stated that high losses were continuing at Stanton even after air leaks into the main lubricant pump had been repaired. This had previously been stated to be the major cause of the problem. It was emphasized again that the Turbinol 153 loss is through the compressor seals into the pipeline. Mr. Lambert also stated that losses remained high at Delhi, sometimes being as much as 14 gallons per hour. The Inverness unit, which is quite similar to the Delhi unit, also showed high consumption rates of Turbinol 153 on start-up (which occurred around October 30).

New information was presented by Mr. Lambert on the current status of the new stations. The Delhi unit has been cleaned and converted to Fyrquel 150. The unit then operated satisfactorily on Fyrquel 150 and after 30 hours had lost somewhat less than 60 gallons of fluid. (A complete description of the Delhi unit is given in Call Report 1971-21.) During the discussion of Delhi experience, the question was raised as to the reported problems with Fyrquel 150 at the Centerville Station which is supposed to be similar in design to the Delhi unit. Mr. Lambert stated unequivocally that, although quite high losses had been experienced during start-up, the unit was running satisfactorily with low fluid consumption.

The Stanton unit has been completely drained of Turbinol 153, cleaned and is awaiting the delivery of a tanktruck of Fyrquel 150. (Information received 11/8 from Dave Moy of Columbia Gulf indicated that the unit had run approximately 60 hours and had consumed a 55 gallon drum of fluid. He still considers this to be high but certainly considerably lower than with Turbinol 153.) During the discussion of the Stanton unit questions were raised concerning the approval of Fyrquel 150 for the General Electric industrial turbine driving the Ingersoll Rand compressor. (See Call Report 1971-18 for details.) Mr. Lambert indicated that they had checked with General Electric and that General Electric had approved Fyrquel 150 for that type gas turbine. Questions were raised by Monsanto with regard to the proper performance of Fyrquel 150 in this unit, particularly with regard to coking problems on some of the interior bearings. It was stated that Monsanto has developed a more thermally stable group of phosphate esters and will be working with General Electric for approval as bearing lubricants. It was also indicated that we would like to discuss these with Columbia Gulf and hopefully obtain a field test sometime in the future.

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On the technical level, Mr. Lambert and the Monsanto group discussed various opinions as to why the high seal loss was occurring but it was impossible to develop any definitive answers (as expected based upon previous calls and discussions).

During the entire meeting it was repeatedly emphasized that Turbinol 153 was not a poor fluid, that Monsanto had done considerable work to indicate that it was equivalent to Fyrquel 150 in all properties thought to be important for this application and that Turbinol 153 had performed very satisfactorily in Texas Eastern units over a number of years. The major difference appears to be the Ingersoll Rand compressor design and, in particular, the high pressure differential across the seals and the complex design of the seals themselves.

Monsanto was shown for the first time the Ingersoll Rand specifications for the fluid to be used in their compressors. These specifications were taken directly from the Stauffer literature by Ingersoll Rand and the lubricant was called out by name. This then led to a discussion on why Columbia Gulf had selected Turbinol 153, why Ingersoll Rand was not fully aware of the properties of Turbinol 153 and why coordination appears to have been poor between the three groups involved, namely Monsanto, Columbia Gulf and Ingersoll Rand. It was pointed out by Monsanto that we felt we had informed all these groups concerning the product. However, if this has not been true, it was not through design, but through lack of communications and inability to contact the correct people.

During the discussion, questions were raised concerning the large amounts of money involved and responsibilities for this. Monsanto stated that they would accept the return of all unopened, unused fluid for credit. Columbia Gulf Purchasing mentioned that since the "inferior fluid" had caused all of the problems, Monsanto would be expected to share in the expenses. The concept of "inferior fluid" was indicated not to be acceptable to Monsanto since we felt that we had done all we could to help and that Turbinol 153 was a workable turbine lubricant and had satisfactorily lubricated and sealed natural gas compressors for a number of years.

The meeting ended with the statement by Columbia Gulf that they would convert all of their remaining units to Fyrquel 150 at this time. They also indicated that they did not want to close the door completely on future relations with Monsanto. They suggested that we visit Ingersoll Rand to discuss seal design and fluids in greater detail. With

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regard to the disposition of the used fluids and other financial considerations involved, Purchasing suggested that another meeting be held in a week to 10 days after additional information had been gathered by Columbia Gulf with regard to performance of Fyrquel 150 in the units and by Monsanto with regard to the Ingersoll Rand seal design and fluid performance problems.

Based upon these discussions, the following actions will be taken: Monsanto will visit Ingersoll Rand and G.E. - Schenectady with regard to Turbinol 153 and phosphate ester lubricants, the files will be reviewed to determine the past history on fluid selection and support and a technical presentation on Monsanto's all phosphate ester fluids will be made to Columbia Gulf personnel after the current problems are resolved.

R. E. Hatton

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