

CASE 1636: Atlantic Refining Co. application for amendment of Rule 115 insofar as said rule is related to required pressure rating of wellhead equipment.

Case No.

1636

Application, Transcript,
Small Exhibits, Etc.

BEFORE THE OIL CONSERVATION COMMISSION
OF THE STATE OF NEW MEXICO

IN THE MATTER OF THE HEARING
CALLED BY THE OIL CONSERVATION
COMMISSION OF NEW MEXICO FOR
THE PURPOSE OF CONSIDERING:

CASE NO. 1636
Order No. R-1377

APPLICATION OF THE ATLANTIC REFINING
COMPANY FOR AN ORDER REVISING RULE
115 OF THE COMMISSION RULES AND
REGULATIONS.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 o'clock a.m. on April 15, 1959, at Hobbs, New Mexico, before the Oil Conservation Commission of New Mexico, hereinafter referred to as the "Commission."

NOW, on this 27th day of April, 1959, the Commission, a quorum being present, having considered the application and the evidence adduced and being fully advised in the premises,

FINDS:

- (1) That due public notice having been given as required by law, the Commission has jurisdiction of this cause and the subject matter thereof.
- (2) That the applicant, The Atlantic Refining Company, proposes that Rule 115 of the Commission Rules and Regulations be revised so as to reduce the required test pressure rating on oil and gas wells.
- (3) That in some instances, Rule 115 as presently written requires the installation of more expensive wellhead equipment than is actually necessary to safely control the well at all times.
- (4) That Rule 115 should be revised as proposed by the applicant.

IT IS THEREFORE ORDERED:

That Rule 115 of the Commission Rules and Regulations be and the same is hereby revised to read in its entirety as follows:

"Christmas tree fittings or wellhead connections shall be installed and maintained in first class condition so that all necessary pressure tests may easily be made on flowing wells. On

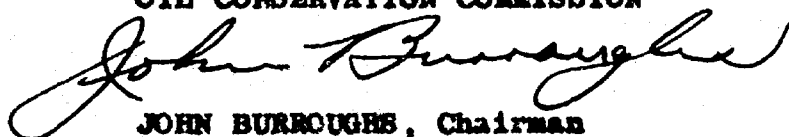
-2-
Case No. 1636
Order No. R-1377

oil wells the Christmas tree fittings shall have a test pressure rating at least equivalent to the calculated or known pressure in the reservoir from which production is expected. On gas wells the Christmas tree fittings shall have a test pressure equivalent to at least 150 percent of the calculated or known pressure in the reservoir from which production is expected.


Valves shall be installed and maintained in good working order to permit pressures to be obtained on both casing and tubing. Each flowing well shall be equipped to control properly the flowing of each well, and in the case of an oil well, shall be produced into an oil and gas separator of a type generally used in the industry."

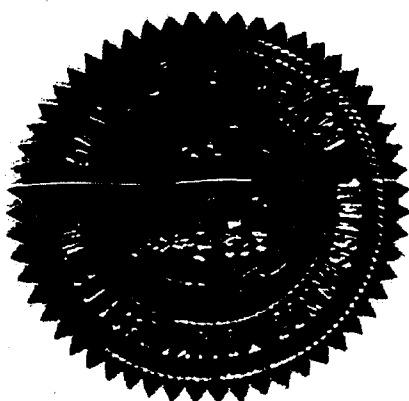
DONE at Santa Fe, New Mexico, on the day and year hereinabove designated.

STATE OF NEW MEXICO
OIL CONSERVATION COMMISSION


JOHN BURROUGHS, Chairman


MURRAY E. MORGAN, Member


A. L. PORTER, Jr., Member & Secretary



ir/

THE TEXAS COMPANY

TEXACO PETROLEUM PRODUCTS



DOMESTIC PRODUCING DEPARTMENT
WEST TEXAS DIVISION

P. O. BOX 1720
FORT WORTH 1, TEXAS

April 10, 1959

New Mexico Oil Conservation Commission
P. O. Box 871
Santa Fe, New Mexico

Attn: Mr. A. L. Porter

Dear Sir:

The Texas Company has been notified of the application of The Atlantic Refining Company to amend Rule 115 of the Commission's Rules and Regulations, in so far as said rule is related to required pressure rating of well head equipment. It is our understanding it will be heard as Case 1636 on the Commission's regular hearing docket April 15, 1959.

The Texas Company has no objection to the changes in Rule 115 to be proposed at this hearing by The Atlantic Refining Company, and wishes this statement of non-opposition to be made a part of the record of the hearing on Case 1636.

Yours very truly,

H. N. Wade
Division Proration Engineer

HNW-JW

Case 1636

EXHIBIT I

API WELLHEAD PRESSURE RATINGS

<u>Working Pressure (PSI)</u>	<u>Test Pressure (PSI)</u>
960	1,450
2,000	4,000
3,000	6,000
5,000	10,000
10,000	15,000

EXHIBIT II

APPROXIMATE COST OF CHRISTMAS TREES*

Single String

960# WP - 1,450# Test	\$ 1,417.90
2,000# WP - 4,000# Test	1,823.67
3,000# WP - 6,000# Test	2,310.38
5,000# WP - 10,000# Test	2,894.30
10,000# WP - 15,000# Test	7,043.60

Dual Parallel String

2,000# WP - 4,000# Test	\$ 3,301.40
3,000# WP - 6,000# Test	Independent Master Valves 4,369.35
3,000# WP - 6,000# Test	Integral Block Master Valve 6,146.49
5,000# WP - 10,000# Test	6,927.26
10,000# WP - 15,000# Test	13,521.36

* Includes Tubing Head

EXHIBIT III

EFFECT OF PROPOSED RULE CHANGE ON CHRISTMAS TREES FOR OIL WELLS

Depth Feet	BHP PSI	Oil Column PSI	Oil TP PSI	Present Tree	Proposed Tree
0				960# WP 1,450# Test	
1,600	640	400	240	2,000# WP 4,000# Test	960# WP 1,450# Test
3,333	1,333	833	500	3,000# WP 6,000# Test	
3,625	1,450	906	544	5,000# WP 10,000# Test	2,000# WP 4,000# Test
5,000	2,000	1,250	750	10,000# WP 15,000# Test	3,000# WP 6,000# Test
8,333	3,333	2,083	1,250		5,000# WP 10,000# Test
10,000	4,000	2,500	1,500		
15,000	6,000	3,750	2,250		
16,667	6,667	4,167	2,500		
20,000	8,000	5,000	3,000		
25,000	10,000	6,250	3,750		

EXHIBIT NUMBER IV

EFFECT OF PROPOSED RULE CHANGE ON CHRISTMAS TREES FOR GAS WELLS

Depth Feet	BHP PSI	Gas Column PSI	Gas TP PSI	Present Tree	Proposed Tree
0				960# WP 1,450# Test	960# WP 1,450# Test
1,600	640	22	618		
2,418	967	49	918	2,000# WP 4,000# Test	
3,333	1,333	90	1,243		
5,000	2,000	195	1,805	3,000# WP 6,000# Test	2,000# WP 4,000# Test
6,667	2,667	341	2,326		
8,333	3,333	520	2,813	5,000# WP 10,000# Test	
10,000	4,000	734	3,266		
15,000	6,000	1,563	4,437	10,000# WP 15,000# Test	3,000# WP 6,000# Test
16,667	6,667	1,896	4,771		
20,000	8,000	2,640	5,360		
25,000	10,000	3,920	6,080	15,000# WP 22,500# Test	5,000# WP 10,000# Test
					10,000# WP 15,000# Test

DOCKET: REGULAR HEARING APRIL 15, 1959

Oil Conservation Commission 9 a.m., Hobbs Auditorium, 1300 East Scharbauer

HOBBS, NEW MEXICO

- ALLOWABLE: (1) Consideration of the oil allowable for May, 1959.
- (2) Consideration of the allowable production of gas for May 1959 from six prorated pools in Lea County, New Mexico; also consideration of the allowable production of gas from seven prorated pools in San Juan and Rio Arriba Counties, New Mexico, for May 1959.

CONTINUED CASES

CASE 1573: Application of Southwestern, Inc. Oil Well Servicing for permission to make a "slim hole" completion. Applicant, in the above-styled cause, seeks an order authorizing it to utilize the "slim hole" method of completion for a well located in the SE/4 NW/4 Section 32, Township 16 South, Range 30 East, Square Lake Pool, Eddy County, New Mexico. Applicant proposes to utilize 2½ inch tubing as a substitute for casing in the above-described well in exception to Rule 107.

CASE 1600: In the matter of the application of M. A. Romero and Robert Critchfield concerning the operation of gas prorationing in the Blanco Mesaverde Gas Pool and the ratable taking of gas from said Blanco Mesaverde Gas Pool in Rio Arriba and San Juan Counties, New Mexico, as well as from the Choza Mesa-Pictured Cliffs Gas Pool in Rio Arriba County, New Mexico.

CASE 1526: Northwestern New Mexico nomenclature case calling for an order for the extension of an existing pool in San Juan County, New Mexico.

- (h) Extend the Angels Peak-Dakota Pool to include:

TOWNSHIP 26 NORTH, RANGE 10 WEST, NMPM
Section 2: NW/4

TOWNSHIP 27 NORTH, RANGE 10 WEST, NMPM
Section 35: SW/4

TOWNSHIP 28 NORTH, RANGE 10 WEST, NMPM
Section 27: W/2
Section 28: E/2

CASE 1618: Southeastern New Mexico nomenclature case calling for an order creating a new pool in Lea County, New Mexico:

- (e) Create a new oil pool for Devonian production, designated as the Crosby-Devonian Oil Pool, and described as:

TOWNSHIP 25 SOUTH, RANGE 37 EAST, NMPM
Section 21: SW/4

NEW CASES

- CASE 1631: In the matter of the hearing called by the Oil Conservation Commission on its own motion to consider changing the date of the Regular Commission Hearing in June 1959 from the 17th to the 9th.
- CASE 1632: Application of Humble Oil & Refining Company for permission to make a "slim hole" completion. Applicant, in the above-styled cause, seeks an order authorizing it to utilize the "slim hole" method of completion for its State "M" Well No. 14 to be located 1980 feet from the North line and 660 feet from the East line of Section 31, Township 22 South, Range 37 East, Eumont Gas Pool, Lea County, New Mexico. Applicant proposes to utilize 2-7/8 inch tubing as a substitute for casing in the above-described well in exception to Rule 107.
- CASE 1633: Application of Humble Oil & Refining Company for permission to make a "slim hole" completion. Applicant, in the above-styled cause, seeks an order authorizing it to utilize the "slim hole" method of completion for its State "G" Well No. 19, to be located 580 feet from the South line and 1980 feet from the East line of Section 23, Township 21 South, Range 36 East, Eumont Gas Pool, Lea County, New Mexico. Applicant proposes to utilize 2-7/8 inch tubing as a substitute for casing in the above-described well in exception to Rule 107.
- CASE 1634: Application of The Pure Oil Company for an order promulgating temporary special rules and regulations for the South Vacuum-Devonian Pool in Lea County, New Mexico. Applicant, in the above-styled cause, seeks an order promulgating temporary special rules and regulations for the South Vacuum-Devonian Pool in Lea County, New Mexico, to provide for 80-acre pro-ration units and well location requirements. Applicant further seeks permission to shut-in its South Vacuum Unit Well No. 3-35 located in the NE/4 NW/4 of Section 35, Township 18 South, Range 35 East, Lea County, New Mexico, and transfer the allowable to its South Vacuum Unit Well No. 1-35 located in the SW/4 NE/4 of said Section 35.
- CASE 1635: Application of Mapenza Oil Company for an exception to the requirements of Order No. R-1224-A. Applicant, in the above-styled cause, seeks an order authorizing an exception to the salt water disposal requirements of Order No. R-1224-A for its State No. 1-A Well, located in the SE/4 SE/4 of Section 14, Township 18 South, Range 37 East, Hobbs Pool, Lea County, New Mexico.
- CASE 1636: Application of The Atlantic Refining Company for an amendment of Rule 115 of the Commission Rules and Regulations. Applicant, in the above-styled cause, seeks an order amending Rule 115 of the Commission Rules and Regulations insofar as said rule is related to required pressure rating of wellhead equipment.

- CASE 1637: Application of The Atlantic Refining Company for an order combining the Allison-Pennsylvanian and the North Allison-Pennsylvanian Pools in Lea and Roosevelt Counties, New Mexico, and for the promulgation of special rules and regulations therefor. Applicant, in the above-styled cause, seeks an order combining the Allison-Pennsylvanian and the North Allison-Pennsylvanian Pools in Lea and Roosevelt Counties, New Mexico, and providing for the establishment of 80-acre proration units in said combined pool.
- CASE 1638: In the matter of the hearing called by the Oil Conservation Commission on its own motion to consider the establishment of a procedure whereby amendments to unit agreements may be approved administratively.
- CASE 1522: Application of General Petroleum, Inc., for an amendment to Order No. R-1299. Applicant, in the above-styled cause, seeks an order amending Order No. R-1299 to provide that any merchantable oil recovered from sediment oil shall not be charged against the allowable for wells on the originating lease, which amendment would revise Rule 311.
- CASE 1639: Southeastern New Mexico nomenclature case calling for an order creating new pools and extending existing pools in Lea and Eddy Counties, New Mexico:
- (a) Create a new oil pool for Tansil production, designated as the Custer-Tansill Oil Pool, and described as:
- TOWNSHIP 25 SOUTH, RANGE 36 EAST, NMPM
Section 7: NW/4
- (b) Create a new oil pool for Pennsylvanian production, designated as the East Hightower-Pennsylvanian Oil Pool, and described as:
- TOWNSHIP 12 SOUTH, RANGE 34 EAST, NMPM
Section 30: NE/4
- (c) Create a new oil pool for Delaware production, designated as the Querecho Plains-Delaware Oil Pool, and described as:
- TOWNSHIP 18 SOUTH, RANGE 32 EAST, NMPM
Section 25: NW/4
- (d) Create a new oil pool for Abo production, designated as the West Warren-Abo Oil Pool, and described as:
- TOWNSHIP 20 SOUTH, RANGE 38 EAST, NMPM
Section 17: SW/4
- (e) Create a new oil pool for Connell production, designated as the Warren-Connell Oil Pool, and described as:
- TOWNSHIP 20 SOUTH, RANGE 38 EAST, NMPM
Section 17: SW/4

- (f) Extend the Atoka Pool to include:

TOWNSHIP 18 SOUTH, RANGE 26 EAST, NMPM
Section 13: E/2 NE/4

- (g) Extend the Bishop Canyon-San Andres Pool to include:

TOWNSHIP 18 SOUTH, RANGE 38 EAST, NMPM
Section 10: N/2
Section 11: NW/4

- (h) Extend the Crosby-Devonian Gas Pool to include:

TOWNSHIP 26 SOUTH, RANGE 37 EAST, NMPM
Section 4: NE/4

- (i) Extend the Culwin Pool to include:

TOWNSHIP 19 SOUTH, RANGE 30 EAST, NMPM
Section 1: NE/4

- (j) Extend the Drinkard Pool to include:

TOWNSHIP 22 SOUTH, RANGE 38 EAST, NMPM
Section 17: SW/4

- (k) Extend the Eumont Gas Pool to include:

TOWNSHIP 20 SOUTH, RANGE 37 EAST, NMPM
Section 23: N/2
Section 24: SE/4 & N/2

- (l) Extend the Justis Gas Pool to include:

TOWNSHIP 25 SOUTH, RANGE 37 EAST, NMPM
Section 13: SE/4

- (m) Extend the Langlie-Mattix Pool to include:

TOWNSHIP 23 SOUTH, RANGE 36 EAST, NMPM
Section 4: NE/4

- (n) Extend the Wilson Pool to include:

TOWNSHIP 21 SOUTH, RANGE 35 EAST, NMPM
Section 19: E/2
Section 20: SW/4

CASE 1640: Northwestern New Mexico nomenclature case calling for an order changing the designation of a pool and extending existing pools in San Juan and Rio Arriba Counties, New Mexico:

- (a) Change the designation of the Otero-Graneros Dakota Pool in Rio Arriba County, New Mexico, to the Otero-Dakota pool.

- (b) Extend the Tapacito-Pictured Cliffs Pool to include:

TOWNSHIP 27 NORTH, RANGE 4 WEST, NMPM
Section 29: E/2

- (c) Extend the Blanco-Mesaverde Pool to include:

TOWNSHIP 31 NORTH, RANGE 13 WEST, NMPM
Section 25: S/2

- (d) Extend the Angels Peak-Gallup Oil Pool to include:

TOWNSHIP 26 NORTH, RANGE 9 WEST, NMPM
Section 6: SW/4
Section 7: NW/4

TOWNSHIP 26 NORTH, RANGE 10 WEST, NMPM
Section 1: All
Section 2: NE/4

TOWNSHIP 27 NORTH, RANGE 10 WEST, NMPM
Section 28: SW/4
Section 29: S/2
Section 32: All
Section 33: W/2

- (e) Extend the Bisti-Lower Gallup Oil Pool to include:

TOWNSHIP 24 NORTH, RANGE 10 WEST, NMPM
Section 2: SW/4

TOWNSHIP 25 NORTH, RANGE 10 WEST, NMPM
Section 19: S/2 S/2

- (f) Extend the Horseshoe-Gallup Oil Pool to include:

TOWNSHIP 30 NORTH, RANGE 16 WEST, NMPM
Section 2: W/2 SW/4

TOWNSHIP 31 NORTH, RANGE 16 WEST, NMPM
Section 19: SW/4 & S/2 SE/4
Section 29: NW/4

- (g) Extend the Verde-Gallup Oil Pool to include:

TOWNSHIP 31 NORTH, RANGE 14 WEST, NMPM
Section 16: SW/4 NW/4
Section 17: E/2
Section 20: E/2

- (h) Extend the Angels Peak-Dakota Pool to include:

TOWNSHIP 26 NORTH, RANGE 10 WEST, NMPM
Section 3: N/2

TOWNSHIP 27 NORTH, RANGE 10 WEST, NMPM
Section 6: E/2 Section 9: W/2
TOWNSHIP 28 NORTH, RANGE 10 WEST, NMPM
Section 22: W/2

Case 1436

NEW MEXICO OIL CONSERVATION COMMISSION

SANTA FE, NEW MEXICO

APPLICATION OF THE ATLANTIC REFINING
COMPANY FOR AN AMENDMENT OF RULE 115
OF THE RULES AND REGULATIONS OF THE
NEW MEXICO OIL CONSERVATION COMMISSION
ENTITLED "WELL AND LEASE EQUIPMENT"

To the New Mexico Oil Conservation Commission
Santa Fe, New Mexico

Comes The Atlantic Refining Company and hereby makes
application for an amendment of Rule 115 of the Rules and Regulations
of the New Mexico Oil Conservation Commission entitled "Well and
Lease Equipment" and respectfully requests that a hearing thereon be
called on the motion of the Commission at the request of applicant
and in support thereof shows:

1. That Rule 115 now in effect is as follows:

"RULE 115: WELL AND LEASE EQUIPMENT

Christmas tree fittings or wellhead connections with
a working pressure equivalent to at least 150% of the cal-
culated or known pressure in the reservoir from which
production is expected shall be installed and maintained
in first class condition so that on flowing wells, gas-oil
ratio, static bottom hole or other pressure tests may be
easily made. Valves shall be installed and maintained in
good working order to permit pressures to be obtained on
both casing and tubing. Each flowing well shall be equipped
to control properly the flowing of each well, and in case of
an oil well, shall be produced into an oil and gas separator
of a type generally used in the industry."

2. That applicant requests that said Rule 115 be amended
to read as follows:

"RULE 115: WELL AND LEASE EQUIPMENT

Christmas tree fittings or wellhead connections shall
be installed and maintained in first class condition so that
on flowing wells, gas-oil ratio, static bottom hole or other
pressure tests may be easily made. For oil wells the
Christmas tree shall have a test pressure rating at least
equivalent to the calculated or known pressure in the reser-
voir from which production is expected, and for gas wells
the Christmas tree shall have a test pressure equivalent to
at least 150% of the calculated or known pressure in the
reservoir from which production is expected. Valves shall
be installed and maintained in good working order to permit

Docket Mailed
4-3-59 P

pressures to be obtained on both casing and tubing. Each flowing well shall be equipped to control properly the flowing of each well, and in the case of an oil well, shall be produced into an oil and gas separator of a type generally used in the industry."

3. That applicant believes that it is in the interest of economy that said rule be amended substantially as above suggested in that the present rule requires the installation in some instances of much more expensive equipment than is actually necessary or in the interest of safety. As an illustration, if a well is being completed in a reservoir which has a pressure of 3,500 psi under the present rule the Christmas tree needed for this well must have a working pressure of at least 5,250 psi. API Christmas trees are manufactured in working pressures of 960 psi, 2,000 psi, 3,000 psi, 5,000 psi and 10,000 psi; therefore, to meet the existing rule requirement, it would be necessary to use a 10,000 psi working pressure Christmas tree to complete the well. Actually, even if the well was completed in a gas reservoir, a 3,000 psi working pressure tree would be adequate. It would, therefore, appear that the present rule requires the installation of wellhead equipment rated greatly in excess of what would actually be necessary to safely control the well at all times.

Respectfully submitted,

THE ATLANTIC REFINING COMPANY

By *K. M. Hollrah*

HERVEY, DOW & HINKLE

BY *D. Hinkle*

Roswell, New Mexico
Attorneys for
The Atlantic Refining Company

OIL CONSERVATION COMMISSION

P. O. BOX 871
SANTA FE, NEW MEXICO

April 27, 1959

Mr. Clarence Hinkle
Hervey, Dow & Hinkle
P.O. Box 547
Roswell, New Mexico

Dear Mr. Hinkle:

On behalf of your client, The Atlantic Refining Company, we enclose two copies of Order R-1377 issued April 27, 1959, by the Oil Conservation Commission in Case 1636, which was heard on April 15th at Hobbs, New Mexico.

Very truly yours,

A. L. Porter, Jr.
Secretary - Director

bp
Encls.

C
O
P
Y

BEFORE THE
OIL CONSERVATION COMMISSION
HOBBS, NEW MEXICO

IN THE MATTER OF:

Case No. 1636

TRANSCRIPT OF HEARING

APRIL 15, 1959

DEARNLEY - MEIER & ASSOCIATES
GENERAL LAW REPORTERS
ALBUQUERQUE NEW MEXICO
Phone CHapel 3-6691

BEFORE THE
OIL CONSERVATION COMMISSION
HOBBS, NEW MEXICO

IN THE MATTER OF:

Case 1636 Application of the Atlantic Refining
Company for an amendment of Rule 115
of the Commission Rules and Regulations.
Applicant, in the above-styled cause,
seeks an order amending Rule 115 of the
Commission Rules and Regulations insofar
as said rule is related to required
pressure rating of wellhead equipment.

Hobbs Auditorium
Hobbs, New Mexico
April 15, 1959

BEFORE:

A. L. Porter, Jr.
Murray Morgan
Governor John Burroughs

TRANSCRIPT OF HEARING

MR. PORTER: The next case to be considered will be
Case 1636.

MR. PAYNE: Case 1636, "Application of the Atlantic
Refining Company for an amendment of Rule 115 of the Commission
Rules and Regulations."

MR. HINKLE: If the Commission please, in Case 1636 we
have one witness which I would like to have sworn.

MR. PORTER: Will the witness stand, please?

(Witness sworn in.)

MR. HINKLE: For the information of the Commission, this
is the application of Atlantic to amend Rule 115. I want to read

the rule as it now stands and the proposed amendment of Atlantic. This is Rule 115, Well and Lease Equipment: "Christmas tree fittings or wellhead connections with a working pressure equivalent to at least 150 per cent of the calculated or known pressure in the reservoir from which production is expected shall be installed and maintained in first class condition so that on flowing wells, gas-oil ratio, static bottomhole or other pressure tests may be easily made. Valves shall be installed and maintained in good working order to permit pressures to be obtained on both casing and tubing. Each flowing well shall be equipped to control properly the flowing of each well, and in case of an oil well, shall be produced into an oil and gas separator of a type generally used in the industry."

Here is the proposed amendment of Atlantic's: The heading would be the same. "Christmas tree fittings or wellhead connections shall be installed and maintained in first class condition so that on flowing wells, gas-oil ratio, static bottomhole or other pressure tests may be easily made. For oil wells, the christmas tree shall have a test pressure rating at least equivalent to the calculated or known pressure in the reservoir from which production is expected." Now, that's instead of 150 per cent. "And for gas wells, the christmas tree shall have a test pressure equivalent to at least 150 per cent of the calculated or known pressure in the reservoir from which production is expected. Valves shall be installed and maintained in good working order to permit pressures

4
to be obtained on both casing and tubing. Each flowing well shall be equipped to control properly the flowing of each well, and in the case of an oil well, shall be produced into an oil and gas separator of a type generally used in the industry."

We have several exhibits, copies of which each of you have, including the staff, and these exhibits are enlarged and will be referred to by the witness.

HENRY W. NIPPERT

called as a witness, having first been duly sworn, was examined and testified as follows:

DIRECT EXAMINATION

BY MR. HINKLE:

Q State your name, please?

A Henry W. Nippert.

Q By whom are you employed?

A Atlantic Refining Company, Dallas, Texas.

Q In what capacity?

A As a production engineer in the remedial and completions group with the Dallas staff.

Q Are you a graduate engineer?

A Yes sir, I am.

Q From what school?

A I received a BS degree in petroleum engineering from the Texas Technological College in 1940.

Q Have you practiced your profession since that time?

5

A Yes sir, I have.

Q State briefly to the Commission your experience, practical experience that you have had?

A Immediately after graduation from college in 1940, I accepted a position with Beckman, Incorporated, out of Odessa, Texas as a roughneck. I roughnecked approximately fifteen months, at which time I entered the U. S. Air Force. After I served four and a half years in the U. S. Air Force, I went to work for the Texas Company at Pampa, Texas as a roustabout. My experience with the Texas Company, in working for the Texas Company, rather, I progressed from a roustabout to a petroleum engineer trainee to a junior petroleum engineer, petroleum engineer, field engineer, area engineer, assistant district engineer and finally district engineer. My last position with the Texas Company was district petroleum engineer at Midland, Texas. During that time, I frequently made trips to New Mexico as that was under the jurisdiction of the Midland office. After leaving the Texas Company, I accepted a position of assistant production superintendent with the Ann Lee Company out of Dallas, Texas, but I was stationed in Midland; I worked for the Ann Lee Company approximately a year and a half and then accepted this present job with Atlantic Refining Company in Dallas.

Q In connection with this proposed amendment of Rule 115, have you made any study or survey of well conditions in New Mexico, in Southeastern and Northwestern New Mexico?

A Yes sir, I have.

Q What was the nature of the study that you made?

A Well, first of all, so that I might have an accurate determination of the bottomhole pressures, I made an analysis of the drill stem tests conducted on the Atlantic wells, bottom-hole pressure surveys conducted on the Atlantic wells, and I also referred to the annual publication of the New Mexico Oil and Gas Conservation Commission Engineering Committee.

MR. HINKLE: Are the qualifications of the witness acceptable?

MR. PORTER: Yes sir, they are.

(Thereupon, the document was marked as Atlantic's Exhibit Number One for identification.)

Q (By Mr. Hinkle) Now, Mr. Nippert, if you will refer to Exhibit One on the board here and explain to the Commission what it is and what it shows?

A Exhibit One of the Atlantic Refining Company is simply a chart that shows the pressure ratings of the wellhead that are available under API specifications. The main purpose of this exhibit is to show the large steps or pressure differential that exists between some of the higher pressures. For example, you'll note that the working pressure goes in steps from 3,000 to 5,000 to 10,000. And we hope to show by this exhibit that we don't have much choice in the actual selection of the christmas

tree, that it is pretty much decided for us by custom and by the manufacturers. So therefore, if we have a well that should require a 6,000 pound christmas tree by a 6,000 pound working pressure. we would have no choice, since there isn't a 6,000 pound christmas tree, we would have to step up to the 10,000 pound. These are all --

Q These are all of the sizes established by the manufacturers?

A Yes, by the manufacturers.

Q Manufacturers of the equipment?

A Yes, sir.

(Thereupon, the document was marked as Atlantic's Exhibit Number Two for identification.)

Q (By Mr. Hinkle) I'll refer you to Exhibit Number Two; will you explain to the Commission what that is?

A You will note that Exhibit Two of the Atlantic Refining Company shows approximate cost of christmas trees. You will note that we have used the word approximate, even though actual dollars and cents are used on the table. The reason for this is Atlantic buys their christmas trees from four major manufacturers and these figures that I have used here represent an average cost of the four manufacturers. You'll note that I have broken it into two parts, the single string completion and the dual parallel string completion, and this simply shows the comparison in the

cost between the single and the dual, and the various pressure ratings. One thing perhaps I should elaborate on here, you'll note that there are two 3,000 pound working pressures on the 6,000 pound test on the dual parallel string. The reason for that is, this first type is a cheaper type, the one used with the single master valves, and the second used is the old interval block master valve, which would be more appropriate for heavier duty or off-shore type locations.

(Thereupon, the document was marked as Atlantic's Exhibit Number Three for identification.)

Q (By Mr. Hinkle) Now, refer to Exhibit Number Three and explain to the Commission what that is and what it shows?

A Exhibit Three of the Atlantic Refining Company is the effect of the proposed rule change on christmas trees for oil wells. The first column on the left indicates the depth of the well in feet; the second column, the approximate bottomhole pressure of the well for the given depth; the third column, the weight of the oil column for that given well with the bottomhole pressure that we are using, and the fourth column represents the tubing pressure at the surface, which would be actually the pressure exerted at the wellhead at the time.

Now, I would like to point out to the Commission at this time that in arriving at this bottomhole pressure, I used the figure of .4 pounds per foot. The tubing, the oil column is

based on what we think is a typical or average well in New Mexico, of 2500 pounds per foot.

(Thereupon, the document was marked at Atlantic's Exhibit Number Four for identification.)

Q (By Mr. Hinkle) Now, refer to Exhibit Four and explain to the Commission what that is?

A I haven't finished.

Q Excuse me, go ahead.

A In the fifth column, I have depicted the type of tree that would be required on these specific examples, wells, by the present Rule 115; and in the last column on the right, I have shown what working pressure would be required should the Commission find out suggestion acceptable.

Q Now, refer to Exhibit Four and explain what that exhibit is to the Commission?

A Exhibit Four of the Atlantic Refining Company shows the effect of the proposed rule change on christmas trees for gas wells. The tables or the columns you will note are quite similar to the ones that we have seen on Exhibit Number Three with the exception of the fact that here we have a gas column weight and a gas tubing pressure due to the weight of the gas column. Now, in this particular case, our assumption is the bottomhole pressure is still the same, of course, but due to the fact that we can be more specific with gas and we don't have so many

unknown factors to throw in, and by assuming that this is strictly a dry gas area as such, we can actually calculate what these pressures would be, and this is the basis for the pressures shown in the gas column. It is a dry gas on a methane basis.

Q Now, one of the purposes, I take it, of this suggested amendment is to affect economy by reason of the fact that the present rule requires the use of more expensive equipment than is necessary, is that right?

A Yes sir, that's correct.

Q Can you point out by taking for instance, referring to Exhibit Three, the equipment which is necessary under the present rules say at a depth of 10,000 feet --

A Yes, sir.

Q --and compare it with the cost of equipment which would be required under the amended rule to see what the saving would be?

A Yes sir, I can take a depth of 10,000 feet. We would expect to have a bottomhole pressure of 4,000 pounds and an oil tubing pressure of approximately 1500 pounds. Now, according to our present Rule 115, it would be necessary for us to install a 10,000 pound working pressure tree on this well since the rule requires the working pressure of the tree to be one and a half times the bottomhole pressure, or 6,000 pounds. Under our suggested change to the rule, we believe that a 2,000 pound working pressure tree would be adequate for that well, and I'll

show what the actual savings would amount to. As we have noted that a 10,000 pound pressure tree would be necessary, in which case with the single it would cost \$7,043.60, whereas we feel that a 2,000 pound tree would be adequate, in which case it would cost \$1,823.67. Now, should that well be a dual, the savings will be even more spectacular. For a 10,000 pound working pressure, the cost would be \$13,521.36 as compared to \$3,301.40.

Q The first instance you mentioned there, there would be a saving of a little over \$5,000.00, would there not?

A Yes, sir.

Q Now, would comparable savings be made in practically all instances and be considerably greater as you get deeper?

A Yes sir, they would be made in practically all cases, and as you pointed out, they would become more appreciable with increased depth.

Q Can you state to the Commission whether or not your proposed rule will afford just as much safety in operation as the present rule?

A Well, obviously we can't say that this rule will afford as much safety because we don't have as much actual safety factors, so to speak, to rely on, but we do feel that the rule will be adequate for all conditions of oil and gas production.

Q The present rule in some cases requires equipment which is all out of reason as far as the safety factor and the economics are concerned?

A Yes sir, that's quite right. We have recently completed a dual well which was required by Rule 115 to have a 5,000 pound working pressure tree on it; the deepest tubing string in the well has a tubing pressure of approximately 1200 pounds and the shallowest tubing string has a pressure of approximately 800 pounds.

MR. HINKLE: That's all the questions we have of the witness.

MR. PORTER: Anyone else have a question of Mr. Nippert?

CROSS EXAMINATION

BY MR. NUTTER:

Q Mr. Nippert, I believe API specifications require that each tree actually be tested to this working pressure, do they not, or is it required to be tested to the test pressure?

A Yes sir, a test pressure, Mr. Nutter. The procedure for doing that is that the manufacturer, when he assembles a tree, he fills it with cold water and he brings it up to test pressure and holds it for three minutes, then he releases that pressure to zero and again brings it up to test pressure.

Q So every tree that we have in the field is rated at a 10,000 pound test, we know has actually sustained the 10,000 pound testline?

A Yes sir, definitely.

Q Now, what about, is there any evidence that as these trees are in place on a well for a long period of time, that they

may deteriorate with age, that the steel may become more brittle or affected by pressure?

A Well sir, there's several things that would enter into that, of course, up in some of our northern states, I have not heard of any occasions here where they become affected by what we call hydrogen embrittlement, and as you pointed out, as the tree becomes older, it loses some of its strength due to that; however, as I say, I don't know of any case in New Mexico. Another thing that would tend to weaken it tree would be corrosion.

Q As a general rule, does it take quite a long while for this to occur, the corrosion, the corrosive element and the hydrogen embrittlement?

A Well, the hydrogen embrittlement can occur fairly rapidly, and of course the degree of severity of the corrosion would govern how long it would take to endanger the tree. Actually, as far as practical purposes, I have seen trees whose thickness has been reduced by 30 or 40 per cent by corrosion and yet we've still had them in use.

Q I suppose that as a general rule if it takes a period of time for these conditions to occur, the bottomhole pressure in the reservoir is going down, anyway?

A Yes sir, and usually you'll have some indication by your pulling jobs, you will find corrosion in the tubing, and when that shows up, of course you immediately start doing something about it, perhaps injecting an inhibitor down the tubing and tree,

so perhaps you'll arrest the corrosion right at that point.

Q In the calculation that you made here on Exhibit Four for the gas column that would be in the well, and then to offset the high pressure at the bottom of the hole, you have used the more severe conditions of completely dry gas in that calculation?

A That's correct, I have used methane, which is the most severe condition. So actually, you would never have a pressure that high on the well, that is, I would say 99 per cent of the time. I don't know of any well that's making pure methane gas.

Q As I understand your proposed rule, you are still throwing in a safety factor on those gas wells?

A Yes sir, there is. There is a safety factor that's not publicized by wellhead manufacturers themselves, in that the actual capacity, so to speak, of this head is perhaps four times the working pressure shown.

Q You can't depend on that, though, can you?

A No; as I say, that isn't the literature, but it actually exists. I think that's brought out many times now due to the present day fracturing practices where many operators go up to and exceed the test pressure in fracturing wells.

Q What is this .4 pounds per foot pressure rating that you used based on, Mr. Nippert?

A Well sir, that's based on the results of drillstem tests, bottomhole pressure surveys and also, as I mentioned earlier, Mr. Nutter, it is based on actual figures that appear

in the annual report of the New Mexico Oil and Gas Engineering Committee.

Q That appears to be an established gradient that is in existence here in New Mexico?

A Yes sir, it sure it.

Q How about this .25 pounds for the oil column, what is that based on?

A Well, that's based on our experience with Atlantic wells, that it would be a typical flowing pressure of an average well here in New Mexico.

Q I see. And I didn't get that gradient that you used for your dry gas, what was that, sir?

A Well, sir, I didn't give any specific figure since it is a variable--actually, as I recall from memory, it varies from .008 to about .157 at 25,000 feet, but that was arrived at those exact figures by using the general gas equation for each 1,000 foot interval.

Q Mr. Nippert, does your proposed rule provide that these wells shall have a tree on oil wells with a test pressure equal to the bottomhole pressure?

A Yes sir, that's correct.

Q And on the gas wells, a test pressure equal to 150 per cent of the bottomhole pressure?

A Yes, sir.

Q That's test pressure in both cases?

A Yes, sir.

MR. NUTTER: Thank you, that's all.

MR. PORTER: Anyone else have a question of Mr. Nippert?

You may --

MR. HINKLE: I have one or two other questions.

REDIRECT EXAMINATION

BY MR. HINKLE:

Q Referring to the questions by Mr. Nutter, Mr. Nippert, in regard to the deterioration of the equipment with time, isn't it true in connection particularly with oil wells, that during the life of the well the pressure goes down and the equipment doesn't have to be of the same strength?

A Yes sir, that's true.

Q One would kind of offset the other?

A That's correct.

Q Are any more stringent rules than you propose here required in Texas or any of the other States?

A No sir, there are not; in fact, they are less stringent in Texas than actually required here.

MR. HINKLE: That's all.

RECROSS EXAMINATION

BY MR. NUTTER:

Q You mean they are less stringent in Texas than the rule you have proposed or less stringent than the existing rule?

A Well, sir, in both cases. Actually, the requirement

in Texas is that the test pressure of the tree be equal to the bottomhole pressure, that's test pressure of the tree, be equal to the bottomhole pressure. That applies to both oil and gas wells.

Q So in other words, your rule is identical with the Texas rule except that you throw in a 150 per cent safety factor for gas wells?

A Yes sir, that's right.

MR. NUTTER: Thank you, that's all.

MR. PORTER: Anyone else have a question?

REDIRECT EXAMINATION

BY MR. HINKLE:

Q Did you prepare all of these exhibits or were they prepared under your direction?

A I made the actual calculations and the Drafting Department prepared them under my --

Q Under your direction?

A Yes.

MR. HINKLE: I would like to offer in evidence Atlantic's Exhibits One through Four inclusive.

MR. PORTER: Without objection, the exhibits will be admitted.

The witness may be excused.

A Thank you, sir.

(Witness excused.)

MR. PORTER: Anyone else have a statement to make, any comments on Case 1636?

MR. ANDERSON: R. N. Anderson, Sinclair Oil and Gas Company. We concur with Atlantic on their modified State-wide Rule 115.

MR. KASTLER: Bill Kastler appearing for Gulf Oil Corporation. Gulf also concurs with Atlantic's application in this case.

MR. PORTER: Any further comments on the case?

MR. PAYNE: Here is a statement that Pan American Petroleum Corporation has asked to be entered in the record: "Pan American has had an opportunity to study Atlantic's proposed revision of Rule 115. It is our opinion that Atlantic's revision is an improvement of the present rule and Pan American urges that the Atlantic's request be approved."

We have also received a statement of "None opposition" from the Texas Company.

MR. PORTER: Is there a difference between support and none opposition?

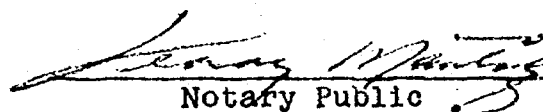
MR. PAYNE: In my mind, there certainly is.

MR. PORTER: If there's nothing further in this case, we'll take the case under advisement. Since the Commission will not have time to conclude any of the other cases, except possibly the nomenclature cases this afternoon, we will recess the hearing until nine o'clock tomorrow morning. (Hearing recessed.)

STATE OF NEW MEXICO)
: ss
COUNTY OF BERNALILLO)

I, JERRY MARTINEZ, Notary Public in and for the County of Bernalillo, State of New Mexico, do hereby certify that the foregoing and attached Transcript of Hearing were reported by me in Stenotype, and that the same was reduced to typewritten transcript by me and contains a true and correct record of said proceedings, to the best of my knowledge, skill and ability.

DATED this 16th day of May, 1959, in the City of Albuquerque, County of Bernalillo, State of New Mexico.


Notary Public

My Commission Expires:

January 24, 1962