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ACCOUNTING DEPT.  
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Exhibit No.:

Witness: John B. Lycan

Type of Exhibit: Direct Testimony

Issue: Industrial

Intervenor Issues;

Rate Impact

Sponsoring Party: ICI Explosives

USA, Inc.

Case No.: ER-97-81

MISSOURI PUBLIC SERVICE COMMISSION

UTILITY DIVISION

EMPIRE DISTRICT ELECTRIC COMPANY

CASE NO. ER-97-81

PREPARED DIRECT TESTIMONY OF

JOHN B. LYCAN

February 20, 1997

FILED

FEB 20 1997

MISSOURI  
PUBLIC SERVICE COMMISSION

BEFORE THE PUBLIC SERVICE COMMISSION  
OF THE STATE OF MISSOURI

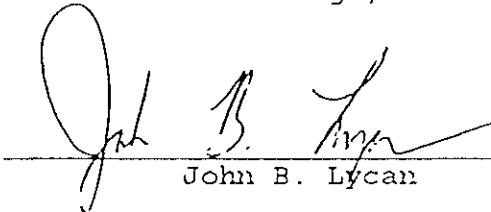
In the matter of The Empire Dis- )  
trict Electric Company for authori- )  
ty to file tariffs increasing rates )  
for electric service provided to )  
customers in the Missouri service )  
area of the Company. )

ER-97-81

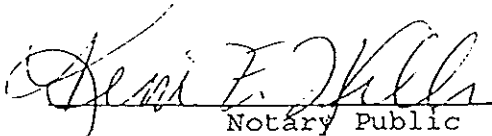
AFFIDAVIT OF JOHN B. LYCAN

STATE OF MISSOURI )  
 ) ss  
COUNTY OF JASPER )

John B. Lycan, of lawful age, on his oath states: That he has reviewed the attached written testimony in question and answer form, all to be presented in the above case, that the answers in the attached written testimony were given by him; that he has knowledge of the matters set forth in such answers; that such matters are true to the best of his knowledge, information and belief.

  
John B. Lycan

Subscribed and sworn to before me this 18 day of February, 1997.

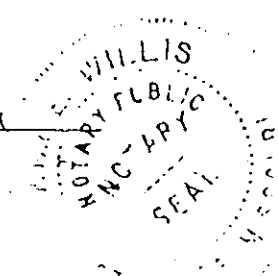
  
Notary Public

[SEAL]

Kim E. Willis  
Notary Public  
State of Missouri  
County of Jasper

My Commission Exp. 07/31/2000

My Commission expires: \_\_\_\_\_



PREPARED DIRECT TESTIMONY OF  
JOHN B. LYCAN

1 Q. Please state your name and business address.

2 A. John B. Lycan, ICI Explosives USA, Inc., Route AA and Newman  
3 Road, Joplin, Missouri.

4  
5 Q. By whom are you employed and in what capacity?

6 A. I am Production Manager, A.N. Products for ICI Explosives USA,  
7 Inc. ("ICI").

8  
9 Q. Please provide your employment history.

10 A. I have a B.S. in Chemical Engineering and have been employed  
11 in chemical manufacturing for 10 years. For the past six  
12 years I have been employed by ICI.

13  
14 Q. Please briefly describe your responsibilities in that position.

15 A. It is my responsibility to ensure that the ammonium nitrate  
16 production facility is operated in a safe, environmentally  
17 responsible, and cost effective manner.

18  
19 Q. What is the nature of the product that ICI makes?

20 A. The Joplin Site of ICI Explosives manufactures nitric acid,  
21 ammonium nitrate and emulsion explosives. The nitric acid is  
22 basically consumed "in plant" in the production of ammonium  
23 nitrate. Ammonium nitrate is both consumed "in plant" in the

1 production of emulsion and shipped off-plant to commercial  
2 explosives markets.

3  
4 Q. Is ICI's market regional, statewide, or national?

5 A. Emulsion explosives manufactured in Joplin are shipped  
6 throughout the U.S. and Canada and exported to Central and  
7 South America. Ammonium nitrate from the Joplin plant is  
8 shipped to markets in over 20 states.

9  
10 Q. Please provide additional detail regarding the operations of  
11 the ICI plant near Joplin.

12 A. The Joplin Site has been manufacturing commercial explosives  
13 since 1912. Currently the plant consists of a Weak Nitric  
14 Acid Plant, an Ammonium Nitrate Plant, and two Emulsion  
15 Explosive Plants. The plant employs 225 people, with an  
16 annual payroll of roughly \$10 million including benefits.  
17 Most of our employees live in Joplin or in nearby communities  
18 in Missouri. Total expenditures at the plant are roughly \$40  
19 million.

20  
21 Q. Does the Joplin plant use any processes that impact on energy  
22 utilization?

23 A. Yes. We use several forms of energy including natural gas and  
24 electricity in significant quantities.

1 Q. Please comment further regarding electrical use at the Joplin  
2 plant.

3 A. The largest demand for electricity is in the production of  
4 nitric acid which is used in all of our other products. Our  
5 total electricity consumption averages approximately 7,000  
6 mWh/month, which represents an electrical cost of roughly \$1.8  
7 million annually. Electricity is our second largest raw  
8 material purchase. The major electrical consumption is  
9 centered around two extremely large motors, each several  
10 thousand horsepower. These motors drive compressors used in  
11 the production process.  
12

13 Q. What is the capacity at the Joplin facility?

14 A. Production capacity at Joplin is 200,000 tons/year of ammonium  
15 nitrate. Production capacity for emulsions is not disclosed  
16 for commercial reasons, but it is presently sufficient to meet  
17 our markets.  
18

19 Q. What competitive challenges does the Joplin facility face,  
20 with particular regard to the local operation and how it fits  
21 into the "big picture" for the company?

22 A. Our Joplin ammonium nitrate facility is challenged in two  
23 significant ways. First, although the plant is certainly  
24 sizeable and occupies many acres, it is, by modern ammonium

1       nitrate manufacturing standards, small. More modern technolo-  
2       gy builds plant with roughly twice the capacity of the Joplin  
3       facility. The lack of these economies of scale results in the  
4       Joplin facility being at a significant cost disadvantage  
5       compared to our major competitors in the North American  
6       marketplace. The costs of raw materials (ammonia and elec-  
7       tricity) affect the manufactured product cost per ton from the  
8       Joplin facility more readily than is the case with larger  
9       competing facilities.

10  
11       Second, the Joplin facility is challenged by its location.  
12       Years ago there was significant mining activity in the region  
13       immediately surrounding Joplin. At that time, the plant was  
14       well positioned to serve that market and shipping costs to  
15       these nearby markets were much lower. But that significant  
16       mining activity is now regional history. Major markets for  
17       ammonium nitrate are no longer close to the plant, but are in  
18       much more remote locations. This places additional freight  
19       burden on the business.

20  
21   Q.   What do you mean by "freight burden."

22   A.   Perhaps it states the obvious, but to be competitive and have  
23       an opportunity to retain our markets, we must be able both to  
24       manufacture product and deliver it to market at a total cost

1 that is competitive. The combination of production and  
2 shipping costs simply cannot exceed levels those markets will  
3 accept. Increased shipping distances means higher shipping  
4 costs, but that is not the full extent of the challenge.  
5 Since the Joplin plant is served by only one rail line, it has  
6 less shipping flexibility than several of our competitors, who  
7 have two or three modes of shipping to their market places  
8 (e.g., more than one rail line and/or the ability to ship by  
9 barge). In our experience, freight carriers are less likely  
10 to be as competitive on freight when only one carrier is  
11 present. Since our freight costs are in most instances,  
12 higher than those faced by our competition, we simply must  
13 produce product at a lower cost than our competition or lose  
14 our business.

15  
16 Q. What steps has ICI taken to keep its production costs low?

17 A. We seek at all times to be as efficient in our operations as  
18 possible. We recently installed equipment to recover waste  
19 steam generated in the production of nitric acid. This steam  
20 is now recycled and used in the production of ammonium ni-  
21 trate. This project substantially reduced our need to produce  
22 steam using our natural gas fired boiler, resulting in reduced  
23 natural gas usage at the plant.

1 On the electrical side, we recognize that we use kilowatthours  
2 rather than particular levels of demand. Since we are on a  
3 rate that has both an energy and demand component, we strive  
4 to keep our demand under control, and run our facilities  
5 around the clock so as to maximize production from those  
6 facilities and reduce our unit energy cost to as low a level  
7 as possible. We have been able to maintain an 85 percent load  
8 factor which is, to my information, quite high. Based on our  
9 experience, unit costs clearly decline as we are able to  
10 increase our production using the same fixed assets.

11  
12 We also own our transformation and associated switch gear and  
13 accept power from Empire from its transmission system at more  
14 efficient and higher transmission voltage levels. Although  
15 this provides some economy, it does mean that the cost and  
16 electrical losses associated with transforming voltage levels  
17 down are our responsibility rather than Empire's.

18  
19 Q. In the last rate case, Empire District Electric Company  
20 implemented time-of-use pricing. Has this helped with cost  
21 control?

22 A. Yes, although given our high load factor it is not as direct a  
23 benefit as it would be for other types of operations. As I  
24 have mentioned earlier, our challenge is to operate our



1 facilities to maximize production. This necessarily limits  
2 our ability to easily shift load from peak to off-peak peri-  
3 ods. However, the limited ability that we do have has allowed  
4 us to have some increased control over our costs of produc-  
5 tion.

6  
7 Q. Please comment on the effects of overall electric prices on  
8 ICI's competitive position.

9 A. As I mentioned, electricity is our most costly raw material  
10 other than ammonia. Electrical costs are obviously an impor-  
11 tant factor in our overall costs of operations. Due to the  
12 extremely competitive nature of the explosives industry,  
13 profit margins continue to erode, and competitors continue to  
14 make every effort to retain their market shares in a relative-  
15 ly flat market place. It is vital to our survival to become  
16 more cost effective in our own operations so as to remain  
17 competitive in the explosives market. In addition, ICI is  
18 looking at all external areas such as freight, raw material  
19 purchases and supplies for ways to control costs in our  
20 business.

21  
22 Q. Why does ICI believe it is important to be able to participate  
23 in the growing competitive power market?

1 A. Electricity is the single raw material that we are unable to  
2 put out for bid or to otherwise subject to our internal cost  
3 control mechanisms. While moving into the competitive market  
4 for power supplies may have some risks, we believe that those  
5 risks are outweighed by the opportunities that we would gain  
6 to negotiate and control our costs in this raw material.  
7

8 Q. Does this conclude your testimony at this time?

9 A. Yes it does. I would like to be able to comment further when  
10 we have received specific proposals from the other parties  
11 regarding how they would propose to address the question of  
12 distributing the increase that Empire has proposed and on our  
13 proposal to allow us direct access to the increasingly compet-  
14 itive electrical market of the future.  
15

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