

Exhibit No.:
Issue: SLCC Construction Costs
Witness: Jim E. Wilson
Sponsoring Party: The Empire District Electric Co.
Type of Exhibit: Rebuttal testimony
Case No.: ER-2001-299
Date Testimony Prepared: May 2, 2001

BEFORE THE MISSOURI PUBLIC SERVICE COMMISSION

REBUTTAL TESTIMONY OF

JIM E. WILSON

on behalf of

THE EMPIRE DISTRICT ELECTRIC COMPANY

FILED
MAY 3 2001
Missouri Public
Service Commission

Jefferson City, Missouri

May 3, 2001

**BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI
REBUTTAL TESTIMONY OF JIM E. WILSON
ON BEHALF OF THE EMPIRE DISTRICT ELECTRIC COMPANY**

MO PSC CASE NO. ER-01-299

1 Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

2 A. James E. Wilson. My business address is 201 East Cherry Street, Nevada, Missouri.

3 Q. BY WHOM ARE YOU EMPLOYED AND WHAT IS YOUR POSITION?

4 A. J. Wilson & Associates, Inc. ("JWA"), Construction Scheduling and Delay Analysis
5 Consultant

6 Q. PLEASE STATE YOUR EDUCATIONAL BACKGROUND FOR THE
7 COMMISSION.

8 A. I graduated from Central Missouri State University in 1975 with a Bachelor of
9 Science Degree in Building Construction Technology (Construction Management).

10 Q. PLEASE PROVIDE A BRIEF DESCRIPTION OF YOUR PROFESSIONAL
11 EXPERIENCE.

12 A. Please refer to my resume attached as Schedule JEW-1.

13 Q. WHY ARE YOU PROVIDING REBUTTAL TESTIMONY IN THIS CASE?

14 A. I was asked by The Empire District Electric Company (Empire) to provide rebuttal
15 testimony regarding assertions made in the direct testimony of Cary Featherstone and
16 Mark L. Oligschlaeger of the Staff of the Commission regarding Empire's actions
17 involving Fru-Con Construction Company, Inc. (F – C) and the cost of the State Line
18 Combine Cycle (SLCC) power plant.

REBUTTAL TESTIMONY OF JIM E. WILSON

MO PSC CASE NO. ER-01-299

1 Q. WHEN WERE YOU FIRST HIRED BY EMPIRE?

2 A. In May, 2000.

3 Q. IN WHAT CAPACITY WERE YOU HIRED BY EMPIRE?

4 A. As a construction schedule and delay analysis consultant regarding the State Line
5 Combined Cycle Plant ("SLCC") with emphasis on the Heat Recovery Steam
6 Generators No. 1 and No. 2 ("HRSG's"). My expertise is in Forensic Scheduling
7 with the ability to track a contractor's performance to date and analyze their ability to
8 meet the project's schedule per their required contract completion date. As part of
9 my employment with Empire, I reviewed the project status reports, schedules and
10 supporting documents to determine the as-built events of the HRSG project.

11 Q. HAVE YOU FILED TESTIMONY PREVIOUSLY BEFORE THE COMMISSION?

12 A. No.

13 Q. WHAT IS THE SUMMARY OF YOUR TESTIMONY?

14 A. In my opinion, Fru-Con Construction, Inc. ("F-C") was at least two (2) months
15 behind schedule as of 4/6/00; F-C refused to prepare a recovery schedule, and F-C's
16 work in the field did not reflect an ability to recover from previous F-C delays to the
17 schedule. It was apparent that if F-C had been allowed to continue after 4/6/00 with
18 erection of the HRSG's, the total project would have been three (3) to six (6) months

REBUTTAL TESTIMONY OF JIM E. WILSON

MO PSC CASE NO. ER-01-299

1 behind schedule with no possibility for any replacement contractor to recover F-C's
2 delays.

3 Q. WHAT ARE THE KEY POINTS OF YOUR TESTIMONY?

4 A. My testimony will focus on three (3) points. First, F-C's work prior to termination
5 had created a ripple delay effect (a wave of problems), which was compounding each
6 day due to F-C's methods of storing, handling and erecting material. These F-C
7 problems were going to have a significant project delay impact to the following
8 phases of the project regarding the balance of plant and the turbine/generator scope of
9 work. The Termination of F-C on 4/6/00 and replacement by Nooter Construction
10 Company was the only viable option available to Empire in order to maintain
11 schedule. Second, Nooter Construction Company (Nooter) needed to be mobilized
12 by April, 2000, in order to meet the project's schedule requirements. If Empire had
13 waited beyond 4/6/00:

- 14 ➤ The ripple effect to the project would have been greater, and
- 15 ➤ Waiting longer to replace F-C would have sacrificed the total project's
- 16 schedule

17 In addition, Empire could not wait until a later point in time allowing F-C to
18 continue to slow-down progress; stop work or eventually default. Eventually

REBUTTAL TESTIMONY OF JIM E. WILSON

MO PSC CASE NO. ER-01-299

1 F-C's problems would have required Empire to terminate F-C or accept the
2 project 3-6 months late. In my opinion, if Empire had taken a wait and see
3 attitude, a much larger cost impact to Empire and the construction costs would
4 have occurred. Third, the consequences of not terminating F-C on 4/6/00 would
5 have been disastrous, causing further schedule slippage and increased delay costs.
6 F-C would have eventually staggered across the finish line at a much greater cost
7 to the project.

8 In my opinion, Empire's proactive position, which began with the negotiations of
9 F-C's contract, continued with monitoring daily F-C's actual performance, and
10 ended with F-C's termination and replacement by Nooter Construction Company
11 saved the rate payer potential costs. My testimony regarding Empire's
12 termination and replacement issues is based on the factual history of this project
13 ("SLCC") and my previous power plant experience. I have provided construction
14 management and delay analysis services for each of the following power stations:

- 15 ➤ Iatan Steam Electric Station
- 16 ➤ Thomas Hill Station
- 17 ➤ State Line Combined Cycle Plant
- 18 ➤ Exelon Corporation (formerly Commonwealth Edison of Illinois)

REBUTTAL TESTIMONY OF JIM E. WILSON

MO PSC CASE NO. ER-01-299

- 1 Fisk Station
- 2 Braidwood I and Byron I Nuclear Stations
- 3 LaSalle Nuclear Station
- 4 Joliet Station 9, Unit 6
- 5 Wil County Station
- 6 Powerton Station, Unit No. 51 and 52
- 7 Crawford Station, Unit No. 7
- 8 ➤ Northern Indiana Public Service Company ("NIPSCO")
- 9 Schahfer Station, Unit No. 15
- 10 NIPSCO Project Management Team Review
- 11 ➤ Orange & Rockland Utilities, New York
- 12 Bowline Point Generating Station, Unit No. 1
- 13 ➤ Polsky (Skygen) Energy Corporation
- 14 Androscoggin Cogeneration Center, Maine
- 15 DePere Cogeneration Center, Wisconsin
- 16 ➤ Bin Qasim Power Station, Unit No. 6, Pakistan
- 17 ➤ Nejapa Diesel Generation Power Station, El Salvador
- 18 Q. WHAT IS THE CURRENT STATUS OF THE PROJECT?

REBUTTAL TESTIMONY OF JIM E. WILSON

MO PSC CASE NO. ER-01-299

1 A. The HRSG's have both been hydro tested, connected to the existing gas turbines and
2 steam blow has been completed. Currently, the steam quality from the HRSG's is
3 being tested before steam is supplied to the 200 MW steam turbine/generator. In
4 addition, the turbine condenser is being sealed and vacuum is being pulled. The gas
5 turbines have been rolled at 40 MW of their 150 MW capacity during steam blow.
6 The total project is on schedule to complete by 6/1/01 per the original contracts. In
7 addition, regarding to the HRSG's completion status:

8 HRSG No. 1 was hydro-tested on 10/7/00; nine (9) days ahead of schedule
9 and no pipe leaks were identified. HRSG No. 2 was hydro-tested between
10 11/15/00 and 11/30/00 and declared watertight on 11/30/00 on schedule.

11 Nooter Construction Company recovered F-C's two (2) months of delay by the hydro
12 dates of 10/7/00 and 11/30/00.

13 Q. WERE THERE INCREASED LABOR COSTS EXPERIENCED AT SLCC?

14 A. Yes. The requirement to maintain schedule was critical. There was a shortage of
15 skilled labor available to build this entire plant simultaneously. It was a requirement
16 of the project schedule that the HRSG's would be constructed first, and then the labor
17 force would move to erecting the balance of plant and the turbine generator. This
18 sequence was made known to all bidding contractors. F-C's inefficient use of the

REBUTTAL TESTIMONY OF JIM E. WILSON

MO PSC CASE NO. ER-01-299

1 labor and F-C's methods of storing, laydown and handling materials increased the
2 amount of labor required to build this project for both F-C and whomever replaced F-
3 C (i.e.: Nooter Construction Company).

4 Q. COULD F-C HAVE RECOVERED THEIR DELAYS AND ACHIEVED THE
5 ORIGINAL CONTRACT SCHEDULE?

6 A. No. Schedule slippage of at least two (2) months had occurred as of 4/6/00 and F-C's
7 work in the field did not reflect the ability to recapture this time. F-C's delays and
8 any further delays would have caused the completion of the HRSG's to overlap with
9 the balance of plant and the turbine/generator work. In addition, F-C had failed to
10 unload Railroad cars within the specified time limit. F-C's failure to unload Railroad
11 cars was causing a shortage of Railroad cars needed for this type of equipment
12 delivery (these were specialized cars) and demurrage charges were being assessed by
13 the Railroad due to F-C's delayed unloading. Manpower labor shortages also
14 occurred due to F-C's failure to staff the project as originally discussed prior to F-C's
15 contract award.

16 Q. WHY DIDN'T EMPIRE WAIT UNTIL F-C DEFAULTED ON THEIR
17 CONTRACT AND THEN TERMINATE FOR CAUSE INSTEAD OF
18 CONVENIENCE?

REBUTTAL TESTIMONY OF JIM E. WILSON

MO PSC CASE NO. ER-01-299

1 A. This question has some legal aspects to it that I am not qualified to answer. I can
2 answer this question from a forensic scheduling perspective based upon my
3 experience. If Empire would have waited to fully develop a case against F-C for
4 Termination for Cause, the schedule would have been lost with no chance to meet the
5 completion date. The schedule was the most critical issue regarding the initial HRSG
6 phase of the project. As of 4/6/00, F-C was already two months behind and no
7 recovery schedule had been developed by F-C. In addition, F-C in 66 days had
8 received 37 Railroad cars to unload but had only unloaded 16 cars by 4/6/00. The
9 total amount of demurrage charges assessed by the Railroad was going to be a
10 substantial amount, projected to be between \$250,000 and \$1 million. F-C's status
11 reports, schedules, correspondence and actual project staffing had demonstrated
12 during March 2000, that F-C was going to slow the job down and they were going to
13 posture themselves in a position to submit a claim for extra costs. F-C knew the
14 HRSG schedule was critical to Empire. Empire had been monitoring F-C's actions
15 each day and took a proactive position with F-C as of 4/6/00, when there was still
16 time to replace F-C with another contractor (Nooter Construction Company) and still
17 meet the HRSG's hydro as-planned dates of 10/7/00 and 11/30/00. To achieve the

REBUTTAL TESTIMONY OF JIM E. WILSON

MO PSC CASE NO. ER-01-299

1 original schedule as of 4/6/00, the only viable option available to Empire was the
2 termination of F-C.

3 Q. DID EMPIRE ISSUE F-C A NOTICE OF A DELAY?

4 A. Yes, Empire and Black & Veatch ("B&V") issued to F-C several notice of delay
5 letters from 1/26/00 to 3/30/00.

6 Q. DID EMPIRE ISSUE F-C A NOTICE OF DELAY REGARDING THEIR FAILURE
7 TO UNLOAD THE RAILROAD CARS AS REQUIRED BY THE
8 SPECIFICATIONS?

9 A. Yes Empire and B&V issued F-C four (4) notice of delay letters during March, 2000.

10 Q. WERE OTHER NOTICES ISSUED?

11 A. Yes. On 3/9/00, Empire issued to F-C a notice of future ripple effect delays being
12 created by F-C regarding the methods in which F-C was storing material and the
13 congestion F-C was creating around the HRSG erection sites.

14 Q. DID EMPIRE REQUEST THAT F-C PREPARE AND SUBMIT A RECOVERY
15 SCHEDULE?

16 A. Yes, however F-C refused on 4/5/00.

17 Q. PLEASE IDENTIFY F-C'S PROBLEMS ON THIS PROJECT AND THE
18 REASONS FOR F-C'S DELAYS.

REBUTTAL TESTIMONY OF JIM E. WILSON

MO PSC CASE NO. ER-01-299

1 A. F-C's January 31, 2000 status report admits their November, 1999 crane and erection
2 plan would not work. It further identifies how, per F-C's decision to use smaller and
3 only 2 erection cranes, F-C was required to manually walk the modules with jacks
4 across the HRSG's. The records indicate that F-C was not aware of the additional
5 and intensive labor required due to F-C's crane selection until after F-C began work
6 in January and February, 2000.

7 Q. FROM A SCHEDULING PERSPECTIVE, WHY WAS IT NECESSARY FOR
8 EMPIRE TO TERMINATE F-C ON 4/6/00?

9 A. There were several decisive events, which occurred during March and April, 2000, as
10 to why F-C had to be replaced immediately.

11 First, as stated previously, the scheduled completion date of the HRSG's was
12 critical to the balance of plant and turbine generator's ability to complete on time
13 with the area's available manpower. The as-built schedule status reflects the
14 HRSG project was at least two (2) months behind schedule. F-C had not
15 developed a recovery schedule. F-C's work in the field did not reflect any ability
16 to complete on time.

17 Second, the means and methods in which F-C had chosen to laydown, store and
18 erect the HRSG's heaviest modules had created a severely congested erection site,

REBUTTAL TESTIMONY OF JIM E. WILSON

MO PSC CASE NO. ER-01-299

1 which required double and triple the amount of expected material handling. F-C's
2 methods and storage of material were each day actually creating more work,
3 which required a longer project duration with increased costs for either F-C or any
4 replacement contractor to eventually resolve. F-C's decision to use smaller and
5 only two (2) cranes caused the HRSG project to become much more labor
6 intensive than expected. These F-C delays were causing a ripple delay effect to
7 the HRSG erection and the total project.

8 Third, F-C's failure to unload Railroad cars was also increasing the project's costs
9 each day. F-C was attempting to use the Railroad cars as laydown areas by
10 scheduling certain car deliveries from various holding yards located at the site; the
11 Columbus yard and/or Nooter-Eriksen's yard (the HRSG equipment
12 manufacturer) instead of utilizing the laydown yards for staging materials.

13 By April 6, 2000, Empire was forced by F-C's actions to terminate F-C in order to
14 mitigate the amount of recovery costs and still achieve the HRSG's original
15 completion schedule. F-C was replaced by Nooter Construction Company
16 between 4/6/00 and 4/19/00. The delays caused by F-C were subsequently
17 recovered by Nooter and the HRSG's scheduled completion dates were in fact
18 achieved as planned:

REBUTTAL TESTIMONY OF JIM E. WILSON

MO PSC CASE NO. ER-01-299

1 HRSG No. 1 was hydro tested 9 days early on 10/7/00 with no leaks
2 identified. HRSG No. 2 was hydro tested and declared watertight per the
3 original schedule completion date of 11/30/00.

4 Empire and F-C attempted to reach a work continuance agreement between
5 3/31/00 and 4/5/00, but F-C deleted the recovery schedule section on April 5,
6 2000, clearly indicating their intent to delay the project. F-C was terminated on
7 April 6, 2000. Nooter Construction Company resumed F-C's work on April 19,
8 2000. Nooter was chosen because:

- 9 ➤ They could mobilize immediately,
 - 10 ➤ Equipment warranties would be maintained, and
 - 11 ➤ The original HRSG schedule would be recovered.
- 12 • HRSG No. 1 hydro test date of 10/16/00 would be achieved, and
 - 13 • HRSG No. 2 hydro test date of 11/30/00 would also be achieved.

14 As of F-C's termination on 4/6/00, F-C was at least two (2) months behind
15 schedule. F-C had also created a project which now required additional time to
16 construct due to material and equipment laydown congestion at the immediate
17 HRSG erection site. Based on information provided to JWA, Empire's lost
18 operation of this plant would have increased Empire's energy production

REBUTTAL TESTIMONY OF JIM E. WILSON

MO PSC CASE NO. ER-01-299

1 expenses by at least \$12,927,600 per month or \$25,855,200 for two (2) months of
2 project delay. Any delay to the completion of the HRSG's would also have
3 caused a ripple delay effect on the following prime contractors, who were
4 constructing the balance of plant and turbine generator. Delay claims could
5 potentially be made by these follow-on contractors if the HRSG's were delayed
6 by F-C due to manpower shortages caused by the HRSG's. If Empire had taken a
7 wait and see approach, the project's cost overrun would have exceeded \$25
8 million and caused more than two (2) months of delay; plus the possible follow-
9 on balance of plant and turbine/generator contractor's claimed damages and legal
10 expenses. These costs and the ripple effect of delays would have been an addition
11 to the two (2) months of delay costs or \$25 million.

12 Q. WHAT WOULD HAVE OCCURRED IF EMPIRE HAD WAITED FOR F-C TO
13 DEFAULT ON THEIR CONTRACT AND THEN TERMINATED FOR CAUSE
14 INSTEAD OF CONVENIENCE?

15 A. This question has some legal aspects to it that I am not qualified to answer. I can
16 answer this question from a forensic scheduling perspective based upon my
17 experience. If Empire had waited for F-C's default, the total project would have been
18 delayed at least two (2) months and possibly six (6) months with substantially more

REBUTTAL TESTIMONY OF JIM E. WILSON

MO PSC CASE NO. ER-01-299

1 costs being incurred. F-C in March 2000 had in fact begun to slow down the project.
2 If Empire had waited to terminate F-C, Empire would have been forced to make one
3 of two business decisions:

4 ➤ Accept the HRSG's when F-C finally completed them at a project delay cost
5 of \$12.9 million per month, less the liquidated damages (Liquidated Damages
6 were \$5,000 per day with a cap of 10% of F-C's total contract amount or
7 \$530,000 vs. \$25 million plus, the delay exposure to Empire). By taking this
8 position, Empire would have accepted the fact F-C refused to prepare a
9 recovery schedule and the project would have finished whenever F-C
10 staggered across the finish line, or

11 ➤ Empire could pay F-C additional costs to accelerate their work and also pay
12 F-C extra costs to resolve the labor and material inefficiencies and congestion
13 F-C had created for themselves with no guarantees, per a recovery schedule,
14 the original completion dates would be achieved. However, with Nooter
15 Construction Company, there were the guarantees the original schedule
16 completion dates would be achieved and the equipment warranties would not
17 be affected. Empire, after the project's completion, could have disputed the
18 acceleration costs paid to F-C and litigated these points in an attempt to

REBUTTAL TESTIMONY OF JIM E. WILSON

MO PSC CASE NO. ER-01-299

1 recover the acceleration and inefficiency costs, but would have incurred more
2 legal costs.

3 Q. FROM A SCHEDULING PERSPECTIVE, DID EMPIRE MAKE THE CORRECT
4 DECISIONS IN TERMINATING F-C IN REGARDS TO MAINTAINING THE
5 SCHEDULE?

6 A. Yes, any delay to the schedule had an impact on costs. In order to confirm the answer
7 to this question you must also consider the following events.

8 ➤ Empire made the correct decision in April, 2000 to terminate F-C and not take
9 a wait and see attitude, which would have resulted in 2 to 6 months of delay.
10 This project delay would have cost the an additional \$25 million plus and not
11 the approximately \$8 million actually expended on Nooter Construction
12 Company to replace F-C and complete the HRSG project per the original
13 schedule.

14 ➤ Empire made the correct decision to replace F-C with Nooter Construction
15 Company in order to maintain the schedule and equipment warranties.

16 ➤ Proof positive of Empire's proactive decisions was the avoidance of delay and
17 the associated \$12.9 million per month in delay costs to Empire proven by the
18 fact that the HRSG's were hydro tested on schedule and the plant is scheduled

REBUTTAL TESTIMONY OF JIM E. WILSON

MO PSC CASE NO. ER-01-299

1 to come on-line per the original schedule and contract completion date of

2 6/1/01.

3 Q. DOES THIS CONCLUDE YOUR REBUTTAL TESTIMONY AT THIS TIME?

4 A. Yes.

JIM E. WILSON

Jim E. Wilson is the President of J. Wilson & Associates, Incorporated and has field and consulting experience in the design and construction industry since 1975. Mr. Wilson is an expert in the preparation and analysis of design and construction claims. He has provided this service for Owners, Contractors, Architects and Engineers from both a defense and a plaintiff's perspective. He has repeatedly over the past twenty (20) years analyzed the delay effect of changed scope of work, delayed access and design drawings (errors and omissions) effect on construction status.

Mr. Wilson has provided expert testimony in State and Federal Courts, Arbitrations, before the Armed Services Board of Contract Appeals, Mediations and Depositions. He has experience in a wide range of construction projects which includes power plants, hospitals, industrial, water and sewage treatment plants, multiple housing projects, office towers, rapid transit systems and trans-continental ships. He has prepared and defended delay claims and provided construction management services on both private and government projects; *e.g.*: Northern Indiana Power Services Company (NIPSCo), Commonwealth Edison Utility Corporation (ComEd), Orange and Rockland Utilities, Inc., the Chicago Housing Authority, the City of Chicago Rapid Transit System and Foster-Wheeler Engineers. Mr. Wilson has also provided on-site construction management services for ComEd and NIPSCo power companies during critical short-duration plant outage periods.

Mr. Wilson has lectured nationally on the topics of CPM Scheduling and Construction Delay Claims. The most recent lectures were for the Kansas Bar Association; Federal Publications' Practical Illinois Construction Law Seminars; Chicago Kent School of Law of Illinois and the American Association of Cost Engineers. Mr. Wilson has been an Adjunct Instructor at Central Missouri State University and the University of Kansas, and was a previous member of NAIT's National College Accreditation Board for five (5) years and is currently on the Advisory Committee of Central Missouri State University. Mr. Wilson is an active Arbitrator for the American Arbitration Association and has served as a co-panelist on complex cases involving multiple disputing parties.

RESUME - PAGE 2

EDUCATION

**Bachelor of Science in Building Construction Technology
Central Missouri State University, 1975;
Associate of Science in Architectural Design
Central Missouri State University, 1973**

PROFESSIONAL ASSOCIATIONS

American Arbitration Association
American Association of Cost Engineers

SPEAKER

Chicago Kent School of Law of Illinois
Institute of Technology, Chicago, Illinois, 1984, 1985 & 1986
"Construction Claims"

Federal Publications
Practical Illinois Construction Law

**Kansas Bar Association
Construction Law**

Society of Manufacturing Engineers,
Kansas City, Missouri, "Planning & Scheduling"

American Society of Cost Engineers,
"Delay Claim Analysis"

UNIVERSITY CLASSES & ADVISORY COMMITTEES

Adjunct Instructor, Central Missouri State University,
Construction Scheduling, M F & C 4000

Adjunct Instructor, University of Kansas,
Construction Scheduling, ARCE 650

Advisory Committee, Central Missouri State University,
Construction Engineering Department, 1991 to 1995

Advisory Committee, Pittsburgh State University,
Construction Management Department, 1990-1995

National Association of Industrial Technology
College Accreditation Board, 1988 to 1992

AFFIDAVIT OF JIM E. WILSON

COUNTY OF Vernon)
) ss
STATE OF MISSOURI)

Jim E. Wilson, being first duly sworn, states that he has participated in the preparation of the accompanying testimony in question and answer form and that the answers he provides are true and correct to the best of his knowledge, information and belief.

Jim E. Wilson
Jim E. Wilson

Subscribed and sworn to before me this 1 day of May, 2001

LUTIE SCHOOLEY
NOTARY PUBLIC-NOTARY SEAL
STATE OF MISSOURI
VERNON COUNTY
MY COMMISSION EXPIRES
1-31-2002
(Notary Seal)

Lutie Schooley
Notary public