

FEDERAL COMMUNICATIONS COMMISSION
Washington, D. C. 20554

July 16, 1979

Charles D. Ferris
Chairman

Mitch Rogovin
Rogovin, Stern, & Hugel
1730 Rhode Island Ave., N.W.
Washington, D.C. 20036

*Maf -
Is this yours*

*Ray
7-23*

Dear Mitch:

For your information I've enclosed a report which AT&T did on the telephone industry's response to the TMI accident. I hope its useful.

Best of luck -- and keep your protective booties on.

Sincerely,

Elliot

Elliot Maxwell
Special Assistant
to the Chairman

Enclosure

① George - please pass this on to the appropriate group. It is quite illuminating. MR

8001170861

P

AT&T

D. J. Culkin
Assistant Vice President

American Telephone and
Telegraph Company
195 Broadway
New York, N. Y. 10007
Phone (212) 393-5342

April 27, 1979

Dr. Larry F. Darby
Chief, Common Carrier Bureau
Federal Communications Commission
1919 M Street, N. W.
Washington, D. C. 20554

Dear Dr. Darby:

This is in response to your letter of April 12, 1979, concerning, in general, the availability and continuity of telecommunications services and facilities experienced during the recent Harrisburg, Pennsylvania nuclear power plant crisis and, in particular, certain paragraphs contained in an article regarding the Three Mile Island incident published in the Sunday, April 8, 1979, edition of the Washington Post.

Contrary to the article, all common carrier communications service provided to the Metropolitan Edison Company (Met. Ed.) facility on Three Mile Island is furnished by the Bell Telephone Company of Pennsylvania (Bell of Pa.) and not by both the Bell and United companies. The territory bordering the west bank of the Susquehanna River is divided by a common east/west local exchange telephone area boundary line delineating the serving territories of the Lewisberry Telephone Company (Lewisberry) to the north, and the General Telephone Company of Pennsylvania (General) to the south. The territory bordering the east bank of the river also is divided by a common east/west local exchange telephone area boundary line distinguishing the local serving territories of Bell of Pa. to the north, and the United Telephone Company of Pennsylvania (United) to the south. (We understand that in addition to the services subscribed to from Bell of Pa., Met. Ed. also has a private

~~8001170867~~

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microwave communications system linking Three Mile Island to other Met. Ed. locations in Pennsylvania.)

With regard to normal telephone facilities on Three Mile Island, Met. Ed. subscribes to two Bell of Pa.-provided 757 PBXs. The PBXs are served from the Middletown central office (via a buried cable) through the termination of 17 two-way, and 6 one-way (out-calling only) local exchange central office lines. The PBXs serve 145 "on-island" telephone stations and also terminate 15 tie lines for direct station access to other "off-island" Met. Ed. locations.

On the east bank of the Susquehanna River in United's territory, Met. Ed. maintains a two-story building commonly referred to as the "observation tower" designed primarily for use by the general public as a location to view the reactor site. Telephone service within this building at the time of the nuclear incident consisted of one business line and one public coin telephone station, each served from United's Elizabethtown, Pennsylvania central office. There were no direct facilities connecting the observation building with the communication system on Three Mile Island at the time of the incident. (As discussed later, the area surrounding the observation building subsequently became the primary focal point for the installation of hundreds of telephones and special circuits required to meet the communications requirements of the various federal, state and local governmental entities, private industry, and news media that became involved in the situation.)

Thus, the local telephone exchange serving areas of the General, Bell of Pa., Lewisberry, and United companies are physically and jurisdictionally separate. Telephone services provided within the vicinity of Three Mile Island at the inception of the emergency were furnished and maintained on that basis by each of the telephone companies involved. (See Attachment I)

We have no evidence indicating any service difficulties were encountered with telephone service furnished to Three Mile Island at the time of the incident. The PBX systems remained operational throughout the crisis period and no trouble reports regarding their performance

were received from the customer during the entire period of the emergency. Furthermore, there are no indications that any problems were being experienced in the Middletown central office. This is not surprising since, at that time (March 28), the public was not aware of the fact that a nuclear emergency was developing. The level of calls being switched through the Middletown central office remained relatively normal during all of Wednesday and Thursday. In fact, all local central offices in the greater Harrisburg area functioned under normal loads until approximately 10:00 a.m. on Friday, March 30. Between 10:00 a.m. and 11:30 a.m. on that day, extremely high local calling volumes were experienced as a result of a radio report of possible evacuation of the four county area. However, data collected at the Harrisburg Sectional Center indicated in-coming toll traffic directed toward both the Middletown (Bell of Pa.) and Elizabethtown (United) local offices began to increase significantly beginning on Wednesday. As a result of these increases in toll traffic, some callers from outside the affected area may have had to re-attempt their calls.

In light of the above, we can only speculate as to the basis for the statements, "There was just a terrible communications problem . . . All the phones were jammed up there." On the one hand, if NRC's representatives proceeded directly to the Island (the article does not make this clear), the PBX systems may have been operating at full capacity by communications being originated and received by Met. Ed.'s operating personnel. On the other hand, if they proceeded to the observation building, communications capabilities would have been limited to two telephones. (Subsequently, in response to a service request from Met. Ed., United installed four additional lines to the observation building.)

With regard to the Bell System's response to the situation, our first involvement occurred on March 28 at 10:10 a.m. when AT&T Long Lines' Washington, D.C. office was alerted by the NRC of the "possible need" for special communications service because of "an incident" in Pennsylvania. At 10:30 a.m., AT&T notified the Department of

Energy's (DOE) Nuclear Emergency Search Team (NEST) that the Bell System was prepared to provide whatever services were necessary. Later that same day, and at the request of NRC, Bell of Pa. established the first three-way conference call linking the reactor site on the Island with NRC headquarters in Bethesda, Maryland and its regional office in King of Prussia, Pa. On Friday, as the threat of a meltdown inside the reactor grew, the NRC again requested a three-way conference call between the same three locations; the call was established and remained established for the next six consecutive days.

During the period of emergency, AT&T Long Lines, Bell of Pa., and C&P Telephone Companies of Washington and Maryland, and the United, General, Continental and Lewisberry Telephone Companies worked together in providing over 400 special services and facilities installed at more than 50 separate locations. These services and facilities were used by four federal agencies and departments, eight Pennsylvania agencies and over thirty different national and international news organizations. Every request for service needed in connection with the emergency was fulfilled, and in most instances, within a matter of hours after receipt. This included numerous special data circuits and dedicated private lines that normally would have required installation intervals ranging up to several weeks. (See Attachment II)

The majority of the services provided during the emergency were installed in portable communications trailers and vans at four locations, (1) on vacant land adjacent to Met. Ed.'s observation building, (2) in a vacant municipal hangar at Capitol City airport, Harrisburg, (3) at the Harrisburg International Airport, and (4) at the Middletown Borough Hall:

(1) Observation Building Site

Since the observation building site is located wholly within United's territory, Met. Ed. initially dealt only with that company with regard to the installation of additional telephone services at that location. However, at 3:00 p.m. on Thursday afternoon (March 29), in a totally unrelated incident, a construction contractor completely severed a 900-pair buried cable in which the observation site lines were carried, thus interrupting communications

April 27, 1979

to the observation area. Consequently, and in order to establish direct communications between the observation site and the Island, Met. Ed. requested installation of an off-premises extension from its main PBX to the observation building. With United's concurrence, Bell of Pa. responded to the request, and it was completed later that day. United completed emergency restoration of service to the observation site by 6:30 p.m.

In view of the critical importance of maintaining continuity of communications, Met. Ed. then requested that all additional facilities to the observation building site be provided by a mix of United (from Elizabethtown) and Bell of Pa. (from Middletown) services, thereby insuring communications diversity. Thereafter, installation, rearrangement, and maintenance of all emergency services to that site were coordinated on that basis.

In response to Met. Ed.'s request, 60 unused pairs in Bell of Pa.'s buried cable running between the Middletown Central Office and the Island were rearranged and were made available to the observation building site. However, based upon the rate of requests being experienced as increasing numbers of federal, state, and media representatives converged on that location, it became obvious that the 60 pairs would be inadequate to handle the anticipated future requirements for service. Consequently, over 17,000 feet of cable, providing an additional 100 pairs, was run by Bell of Pa. from the Middletown central office to the observation building. That installation was expedited and was completed (in a matter of thirty hours) on Saturday, March 31.

By late Monday morning (April 2), primarily because of the tremendous numbers of local Middletown and Elizabethtown business lines, together with numerous foreign exchange services from Harrisburg installed at the observation building site, and the resultant difficulties in locating particular individuals at that location, the installation of a PBX to concentrate all of these facilities and to enable the switching of communications to and among the various entities, was requested. An "801" PBX was shipped and arrived at the observation building location at 5:30 p.m. that evening; it was installed and placed in service by Bell of Pa. by 5:00 p.m. the following day.

(2) Capitol City Airport, Harrisburg

The Department of Energy (DOE) established a command center in a vacant municipal hangar at the Capitol City Airport, Harrisburg. Between Thursday morning (March 29) and Sunday morning (April 1), 15 Harrisburg business lines, 3 special private lines, and 2 off-premises extension lines, providing direct access to DOE's Centrex Service in Washington, D.C., were installed for that agency. These services were terminated in DOE's Nuclear Emergency Search Team (NEST) portable pod command center which was transported to the Capitol City Airport from the West Coast. The NEST procedures, in which the Bell System plays a key communications role, were activated by DOE on Friday, March 30, and the initial communications lines requested by DOE were available at the hangar site when the portable pod arrived.

(3) Harrisburg International Airport

Building No. 26 at the Harrisburg International Airport served as the central point for the communications required in connection with President Carter's visit to the nuclear reactor site on Sunday, April 1. On that morning, the White House Communications Agency (WHCA) advised AT&T's Long Lines Department of the details of the President's trip. This included the installation of the President's switchboard at the airport location to provide for several direct circuits to Washington, D.C., radio circuits, local Harrisburg exchange lines, and several extensions to numerous locations. Two vehicles, equipped with a full range of communications capabilities, were also required. This work was completed on two hours' notice.

At 11:25 a.m. on the previous Friday (March 30), about 90 minutes after the Governor's announcement of a possible evacuation of all persons in the area, AT&T Long Lines received a WHCA request for the installation of three special circuits:

- . a "hotline" from the White House to the Governor's office; and
- . two direct lines from the White House to NRC's communications trailer at the observation building site.

The hotline was operating by 2:30 p.m. that day; the two direct lines to NRC's communications trailer were operational at 4:53 p.m. and 7:50 p.m., respectively. (See Attachments III and IV, letters of commendation from Commanding General, WHCA, to Bell of Pennsylvania and AT&T Long Lines.)

(4) Middletown Borough Hall

During the height of the crisis, 117 individual services at more than 30 different locations were established for the media alone. The Middletown Borough Hall served as a primary location for the media's activities. See, for example, Attachment V, which provides a listing, by news entity, of the services installed at that location during the weekend from March 30 through April 1. Of course, the press room at the State Capitol was also critical to the media's operations necessitating the installation of numerous diverse facilities. (See Attachment VI, letter from Newsroom Supervisor, Pennsylvania Legislative Correspondence Assn. to News Bureau Supervisor, Bell of Pa.)

With regard to the operation of the public telephone network during the crisis period, that performance will be discussed in the following sequence: (a) local central office performance; (b) operator service performance; (c) customer trouble reports; and (d) interoffice switched network performance. As previously stated, although the crisis actually began on March 28, there was little recognition by the public of the magnitude of the problem and, thus, no significant impact on the public telecommunications network until Friday morning, March 30.

(a) Local Central Office Performance

A high incidence of dial tone delays was experienced immediately following the Governor's announcement at approximately 10:00 a.m. of a possible evacuation of the four county area. During the 90 minute period following that announcement, local central offices in the greater Harrisburg area experienced call volumes ranging from 111% to 353% of normal. As a result, dial tone delays measuring from 25 to 90% were recorded during peak periods. (Dial tone is considered "delayed" whenever the interval from off-hook to receipt of the tone exceeds 3.0 seconds). Even with these peak loads of traffic, however, all central offices continued to process calls. The only end office controls activated were the automatic line load

controls associated with an ESS switching machine at Harrisburg, and another ESS machine at Camp Hill, Pennsylvania. Local call volumes returned to normal after 11:30 a.m. on Friday and remained at normal levels throughout the remainder of the emergency period.

(b) Operator Service Performance

On Friday, the Harrisburg-Lancaster Traffic Service Position Service (TSPS) complex handled a total of 141,973 calls, 24,898 more than on an average Friday. In anticipation that such high traffic volumes would continue, emergency procedures were initiated including the recall of all personnel on vacation, and the temporary transfer of certain TSPS operators and management personnel from other locations to augment the Harrisburg TSPS complex. Further, all centralized automatic message accounting (CAMA) traffic was re-routed to positions other than TSPS. Thus, the TSPS complex was freed to handle only those customer calls requiring operator assistance to complete. As a result of these steps, TSPS performance reflected an average answer time for the period through Monday, April 2 of less than one second, despite a Monday record volume of over 143,000 TSPS handled calls. Of interest, the call volume registered between 10:00 and 10:30 a.m. on Monday was the highest half-hour period ever recorded in the Harrisburg TSPS complex, yet the average answer during that period was 1.2 seconds and the average work time (AWT) - the interval required to handle a call - was 25.2 seconds. In summary, during the four-day period from Friday through Monday, the Harrisburg TSPS complex handled 502,220 calls, 124,645 or 33% above normal. The AWT during this period was 25.8 seconds. Also during this same period, Directory Assistance handled 242,200 calls, 54,000 above normal; Operator Intercept processed 107,820 calls, 117% of normal.

(c) Customer Trouble Reports

With the exception of Friday, March 30, the number of customer reports received during the emergency period was actually less than the experienced average during a normal Wednesday to Monday period. On Friday, the reports were over one and one-half times the experienced average (671 vs. 400). The majority of these reports (420) were received during a four hour period and related to the network overload condition experienced between 10:00 a.m. and 11:30 a.m.

(d) Interoffice Switched Network Performance

The extremely high interoffice call volumes experienced in the public switched network on Friday, March 30 presented a "text book" case of a focused overload, with heavy calling into the Harrisburg area from the entire nationwide telecommunications network. This heavy calling caused congestion in the Harrisburg 4A toll switching machine which recorded 39.8% sender delay (analogous on a DDD basis, to experiencing a delayed dial tone condition when attempting to place a local call) on Friday morning from 10:00 to 11:00 a.m. Five minute periods within that hour registered sender delays as high as 70%.

The objective in such a situation is to inhibit switching congestion and to enhance outward calling from the affected area. Controls are first applied within the local area (in this case, the 717 NPA) and as additional controls are required, they are implemented by stages to increasingly larger areas, e.g., local controls, then intraregional controls, and finally, interregional controls.

As the focused calling began to build on Friday morning, the Harrisburg 4A machine began to experience sender delay. The first control applied was a 100% cancellation of alternate routing on all Harrisburg trunk groups in the Wayne (Pa.) Regional area. This was to preclude calls from reaching Harrisburg on an alternate-routed basis (10:20 a.m.). This did not inhibit the traffic build-up sufficiently and at 10:27 a.m., this control was changed to a 50% cancellation of all direct and alternate-routed traffic to Harrisburg. Additionally, at 10:47 a.m., an operator limitation-one attempt on all calls to the 717 NPA was ordered in all operator offices in the Wayne and Pittsburgh Regions.

At 10:50 a.m., a 50% cancellation of all direct and alternate-routed traffic to Harrisburg was ordered at all offices in the nationwide network having Harrisburg trunk groups. Further, the one operator attempt limitation to the 717 NPA was extended to all operator units in the network (Bell and Independent Company). With the exception of the one operator attempt limitation, these controls were removed at 12:20 p.m.

In addition to these controls, other measures designed to directionalize selected trunk groups (e.g., rearranging two-way trunk groups to function as one-way-outward calling from Harrisburg only) to give priority to calls originating from the affected area were employed.

Heavy calling to Harrisburg was experienced again coincident with the early evening news. Similar controls were activated and remained in effect until after midnight. The operator attempt limitation remained in effect throughout the weekend.

In summary, switching attempts on the Harrisburg 4A machine were nearly double those of a normal Friday - 1,745,000 vs. 970,000. Busy hour attempts exceeded 137,000. Call attempts for the Friday to Sunday period totalled more than 5,100,000.

With regard to insuring the timely dissemination of emergency information to the general public, during the period of emergency, 7 television pick-ups and 14 radio loops were installed which handled over 60 individual television and radio broadcasts, including one television feed direct to Tokyo, Japan. In addition, Bell of Pa. located a mobile television van adjacent to the State Capitol building to provide the office of the Governor with immediate television broadcast capability.

Concerning the availability of necessary communications had a general evacuation been ordered by the Governor, Bell of Pa. coordinated linking the state Civil Defense offices in Dauphin, Cumberland, York, Lancaster and Lebanon Counties into a special dedicated network for instant communications. Further, AT&T's Government Communications Department maintained close contact with the Office of Emergency Preparedness, the Defense Communications Agency, and the Federal Disaster Assistance Administration to plan communications needs in the event evacuation became a reality. Contingency plans were prepared and had an evacuation been ordered, communications facilities for virtually all of the agencies involved in the emergency would have been relocated to another preselected site.

Dr. Larry F. Darby

-11-

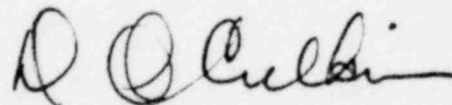
April 27, 1979

To provide a more graphic display of the activities undertaken by the telephone companies involved in the telecommunications response to the Three Mile Island nuclear reactor crisis, we are enclosing (Attachment VII) a Bell of Pa. special publication concerning the matter.

In summary, we are proud to report that we find no evidence that the operation of the telephone network during the crisis in any way inhibited the dissemination of emergency information to the public, or adversely affected the management of the crisis. Further, there is no evidence supporting any assumption that a general evacuation of the area would have been hindered by a lack of telephone communications. Finally, the many telephone companies involved in responding to the emergency cooperated fully to get the job done.

We trust this provides you with the desired information. If you have further questions, we will be pleased to discuss them with you at your convenience.

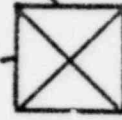
Very truly yours,

A handwritten signature in cursive script, appearing to read "D. O. Culkin".

Attachments

To
HARRISBURG

SUSQUEHANNA
RIVER



MIDDLETOWN
CENTRAL OFFICE

BURIED CABLE
TO ISLAND

BELL OF PA.
TERRITORY

LEWISBERRY
TERRITORY

COMMON BOUNDARY



PBX
SYSTEMS
(BELL)

OBSERVATION
BUILDING

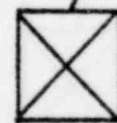
1 BUS LINE
1 COIN STA. LINE

THREE MILE
ISLAND

UNITED
TERRITORY

CUT
3/29 3:00p.

5 900 PAIR
BURIED CABLE



ELIZABETHTOWN
CENTRAL OFFICE

GENERAL
TERRITORY

COMMON
BOUNDARY

NOT TO SCALE

POOR ORIGINAL

Major Services Installed
Three Mile Island Crisis
March 29 - April 2

| <u>Entity</u> | <u>Number</u> |
|-----------------------------------|---------------|
| Media | 117 |
| Metropolitan Edison Company | 85 |
| Nuclear Regulatory Commission | 37 |
| Pennsylvania State Government | 31 |
| Department of Energy | 20 |
| Catalytic Company | 14 |
| White House Communications Agency | 11 |
| Dauphin County Pennsylvania | 11 |
| General Services Administration | 8 |
| Environmental Protection Agency | 2 |

WHITE HOUSE COMMUNICATIONS AGENCY
THE WHITE HOUSE
WASHINGTON, D.C. 20500

WHCA-B

APR 6 1979

Mr. William L. Mobraaten
President
The Bell Telephone Company of Pennsylvania
One Parkway
Philadelphia, Pennsylvania 19102

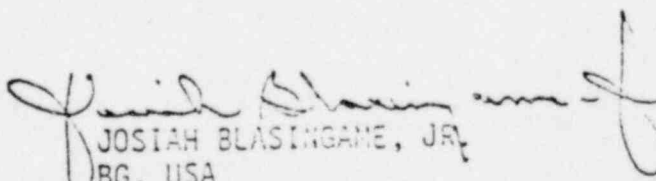
Dear Mr. Mobraaten:

I would like to extend my most sincere appreciation to you and the members of your organization for the outstanding support provided during the recent short-notice visit of President Carter to Harrisburg, Pennsylvania. As a result of the cooperation and extra effort of your personnel, Presidential communications needs were met in a timely and successful manner.

Every telephone company person we came in contact with during our short stay was most enthusiastic, professional, and extremely helpful. Of particular note were the tremendous efforts of Messrs. Marlin Peters and John Barber and their respective crews who were involved with the installation of telephones, radio lines, and full period voice lines. Their timeliness and sense of urgency were extremely gratifying.

It was indeed a pleasure to work with dedicated professionals who obviously have a great deal of pride in their work and company. We look forward to working with the Bell Telephone Company of Pennsylvania in the future.

Sincerely,


JOSIAH BLASINGAME, JR.
BG, USA
Commander

Copy furnished:
Mr. Harold Quann ✓

POOR ORIGINAL

WHITE HOUSE COMMUNICATIONS AGENCY
THE WHITE HOUSE
WASHINGTON, D.C. 20500

APR 6 1979

WHCA-B1

Mr. Harold Quann
Manager-Government Communications
AT&T Long Lines
2055 L St., 6th Floor
Washington, D.C. 20036

Dear Harold:

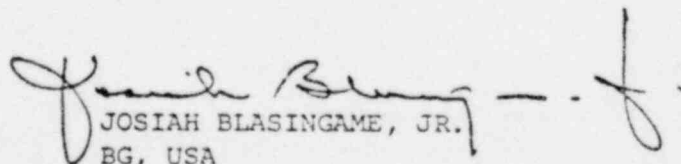
Once again your personnel, when asked to do the impossible, have put forth maximum effort and exceeded expectations.

Last Friday when you received the request for long line service to Three Mile Island, PA the response was tremendous. The circuits were brought up much sooner than hoped for and were of first rate quality.

When asked to provide additional service for the President's visit to Three Mile Island, your people again performed the same miracle. Only a company who employs professionals who have extreme pride in their work and their company could have performed such a service.

I want to extend the sincere appreciation of the White House Communications Agency to you, your office and all the "behind the scene" people. Your continued support in providing reliable communications to the President of the United States is truly appreciated.

Sincerely,


JOSIAH BLASINGAME, JR.
BG, USA
Commander

POCR ORIGINAL

Middletown Borough Hall
Lines Installed for News Media
Weekend of March 30 - April 1

ABC - 3
Canadian Broadcasting - 1
CBS - 2
Baltimore Sun - 1
Associated Press - 2
York Dispatch - 1
Japanese Press - 1
Washington Post - 2
Wall Street Journal - 1
WSBA Radio, York - 1
WHP Radio, Harrisburg - 1
WCMB Radio, Harrisburg - 1
WCAU-TV, Philadelphia - 1
Voice of America - 1
United States International Communications Agency (USICA) - 1
UPI - 3
Evening Sentinel, Middletown, PA - 1
Scripps-Howard Newspaper - 1
Philadelphia Inquirer - 1
Philadelphia Bulletin - 1
Newsday, Long Island, NY - 1
New York Daily News - 1

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National Broadcasting Company - 2

National Public Radio - 1

Mutual Broadcasting System - 1

Minneapolis Star and Tribune - 1

Miami Herald - 1

Mainichi Newspapers, Japan - 1

Los Angeles Times - 1

L.I.S. Newsletter - 1

KYW Radio, Philadelphia - 1

KYOTO News Agency, Japan - 1

Japanese Broadcasting Corp. - 1

D.I.R. Broadcasting, New York - 1



PENNSYLVANIA LEGISLATIVE
CORRESPONDENTS ASSOCIATION

1287

524-525 STATE CAPITOL - HARRISBURG, PA. - PO BOX NO 2XX

Mr. James Smith
News Bureau Supervisor
Bell of Pennsylvania
210 Pine Street
Harrisburg, Pennsylvania
April 8, 1979

Dear Jim:

Now that the hectic pace of the last ten days seems to have subsided I would like to thank you and everyone from Bell for their assistance and cooperation. As the seriousness of the emergency became known, more and more press people converged on the Capitol Newsroom. The wire services needed additional phones, TV people required special circuits, loops etc... As usual Bell Telephone was on the job and all such requests were handled quickly and efficiently.

On behalf of myself and the members of the Capitol Press Corps please accept our heartfelt thanks for a job well done!

Sincerely

A handwritten signature in cursive script that reads "Jack Nagle".

Jack Nagle
Newsroom Supervisor

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