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D.C.

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PDR ADOCK 50-329 A
PDR ADOCK 50-330 A



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

OCT 13 1978

Docket Nos. 50-329
and 50-330

MEMORANDUM FOR: Voss A. Moore, Assistant Director
for Environmental Projects

THRU: Wm. H. Regan, Jr., Chief
Environmental Projects Branch 2

FROM: O.D.T. Lynch, Jr., Sr. Project Manager
Environmental Projects Branch 2

SUBJECT: TRIP REPORT ON SITE VISIT TO MIDLAND PLANT, UNIT NOS.
1 AND 2, MIDLAND COUNTY, MICHIGAN

During the week of September 5, 1978, the environmental review team visited the Midland Plant, Unit Nos. 1 and 2 site. The team was composed of representatives of the NRC Division of Site Safety and Environmental Analysis (Environmental Projects, Environmental Specialists and Hydrology-Meteorology), Office of Executive Legal Director, Office of Inspection and Enforcement (Region III and NRC Resident Inspector), Argonne National Laboratories (ANL), U. S. Fish and Wildlife Service (F&WS), and the Michigan Department of Natural Resources (MDNR). Additional representatives of the State of Michigan [Michigan Attorney General's Office (MAG) and Michigan Environmental Review Board (MERB)] also toured the site with the environmental review team and attended the Staff/Applicant question and answer meeting held at the Midland Holiday Inn after the site tour.

Officials of State, Midland County and City agencies and local organizations were also visited. These agencies and organizations were: Michigan Department of State - History Division (State Historic Preservation Officer and State Archaeologist); Midland County Planning Commission (Planning Director); Midland County Road Commission (Engineer Superintendent); Midland City Planning Department; and the Saginaw Archaeological Commission (Executive Director).

Interest in the site visit and meetings was shown by the local news media with interviews of the Environmental Project Manager being conducted by local radio station WMPX (Mr. Matt Fisher, 3:15 PM, September 5, 1978), local television station WJRT-TV Channel 12 (Mr. Robbins, 4:00 PM, September 6, 1978), and local newspapers, the Midland Daily News (Ms. Starr Ely, 1:00 PM, September 5, 1978) and the Bay City Times (Mr. Tyrus R. Knoy, 1:00 PM, September 6, 1978).

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Ms. Ely and Mr. Knoy attended and observed the Staff/Applicant question and answer meeting held at the Holiday Inn, Midland, on September 6, 1978.

A summarized schedule of the week's activities and principal personnel contacted is enclosed as Attachment 1.

The Midland Plant site was toured on Wednesday, September 6, 1978, with representatives of F&WS, MDNR, MAG, MERB, and Consumers Power Company (CPC). The combined interagency team made their observations of the site and environs on the ground, by foot and vehicle, and by an overflight, by helicopter, of the site and related transmission line corridors.

CPC is constructing two nuclear power units at the Midland Plant. The units will have a net electrical generating capacity of approximately 456 to 595 megawatts for Unit No. 1 (depending on process steam production) and 805 megawatts for Unit No. 2. Unit No. 1 will supply process steam (up to 3,650,000 pounds per hour) for the Dow Chemical Company complex immediately across the Tittabawassee River. The Midland Plant will consist of the following principal structures: two reactor containment structures, auxiliary building, turbine structure, solid radwaste building, office and service building, evaporator building, warehouse, combination shop, circulating water intake structure, change house, administration building, switchyard, discharge structure and cooling pond. At the time of the site visit the applicant considered the plant to be 50% complete, with expected fuel loading dates of February 1980 for Unit No. 1 and November 1981 for Unit No. 2.

Nearly all of the principal facilities were in advanced stages of construction or completed. The cooling pond was about 50% full, with the entire surface area covered by water. Helicopter overflights and ground reconnaissance enabled the team to view the site in detail, including significant segments of the transmission line corridor, the laydown area, cooling pond, flood plain adjacent to the Tittabawassee River, and the area immediately surrounding the site, including major portions of the city of Midland. Thirty-five millimeter color slides were taken both in the air and on the ground by the review team, showing the site and its immediate environs in detail.

On Wednesday afternoon a question and answer meeting was held at the Midland Holiday Inn between the review team and the applicant. Several state officials and representatives of the news media attended the meeting as observers. The draft questions provided by our letter of August 10, 1978 (Regan/Howell) to the applicant were used as an agenda. These questions will be revised according to the clarification and information received at this meeting and will be formally provided to the applicant for his response in the very near future. This response will be submitted to the staff as an amendment to the applicant's Environmental Report.

Wednesday evening several members of the review team and a representative of the applicant and his archaeological consultant met with Mr. Fel V. Brunett, Executive Director of the Saginaw Archaeological Commission at his residence in Saginaw. Associates of the Chippewa Nature Center (CNC) who are amateur archaeologists knowledgeable of the site and surrounding area also attended the meeting.

Mr. Fel Brunett described the archaeological conditions known to him of the Midland Plant site and the region around it. As an example, while working at the Chippewa Nature Center, just upriver from the Midland Plant site, he determined several distinct archaeological sites on the CNC, some as old as 1000 BC, others as young as the 1800s, AD. He indicated that cultural material usually occurred on river levees, sand ridges and the old shoreline of the bay/lake. On one levee site that Mr. Brunett investigated where Highway 20 crossed the Tittabawassee River, a thickness of as much as nine feet of cultural material was found.

Both Mrs. Lois Wang, CNC, and Mr. Brunett had visited the Midland Plant site; Mrs. Wang in 1969, and Mr. Brunett in 1971. Mrs. Wang observed a high sand ridge on the southeast portion of the site (now part of the cooling pond) and found large flint chips, large cores, and a knife-like flake. Just south of the present containment structure location she found scrapers. She still has the artifacts she recovered during these visits.

Mr. Brunett indicated that he walked the site in the summer of 1971 as a member of the Saginaw Valley Chapter of the Michigan Archaeological Society, and saw, in the north and northeastern corner of the site, crushed bones (animal?), fire-cracked rock, and black flint chips in the walls of a fresh cut ditch. He also indicated that there could be levees on the site, and that if they were occupied they could have a tremendous potential for containing archaeological material.

Mrs. Wang developed a listing of most of the sites of archaeological interest in Midland County. This listing is in the form of a report entitled "A Midland County Archaeological Survey, Volume I and Volume II, 1974-1975" and exists in only three copies. One copy is held by Mrs. Wang, one by the State Archaeologist and one copy is with the University of Michigan. Excerpts of the document indicating sites in the immediate area of the Midland Plant will be made available to the NRC staff.

Mr. Brunett showed the staff a map that indicated the whole Midland Plant site was within an Indian reservation established in the early 1800s. The map implies that an actual Chippewa Tribe village existed in 1822 and extended down to and included the area of the reactor buildings. A copy of the pertinent portion of that map is provided as Attachment 2.

Both Mr. Brunett and Mrs. Wang indicated that extensive collections of artifacts had been made from the area of the Midland Plant site and are owned by several local residents.

Based on the above information and his knowledge of the area, Mr. Brunett indicated that he would give the Midland Plant site a high rating for potential archaeological findings. He indicated that there appears to be much more material at the Midland Plant site than there is at the Chippewa Nature Center, where active archaeological recoveries were being made. He stated some of the Midland Plant sites, now destroyed or disturbed by construction, could have been eligible for inclusion in the National Register, and possibly, enough still exist to qualify as a district in the Register.

Mr. Brunett also indicated that he believed there is no general knowledge in the city of Midland of the archaeological potential of the Midland Plant site.

Members of the staff met to discuss socio-economic impacts with Mr. James Schroeder, Midland City Planning Commission, at 8:00 AM, Thursday, September 7, 1978, at the Planning Commission's offices in the Midland City Hall in Midland.

Mr. Schroeder indicated that he did not believe there had been any measurable impacts to the community as a result of the Midland Plant and expected none in the future. Some increase in traffic congestion has occurred, as expected, but this has not caused any real problems. About 2% of the presently available apartments are being used by the Midland Plant construction force and this is not causing any shortage of apartments. The existing city school system has assimilated the additional students associated with the Midland facility with no difficulties and will easily assimilate the 200 students anticipated when the operational work force takes over.

While Mr. Schroeder did not have any precise figures, he indicated that there had been no major increases in crime and supported this by indicating that the police force has remained stable. City treatment facilities are not and will not be used by the Midland Plant, and the municipal water being used by the facility is minimal and poses no problems to other municipal water users. He indicated that Midland has a largely transient population and, therefore, should be able to assimilate the operational work force (approximately 300) with little or no impact.

Mr. Schroeder did indicate that the annexation issue was not resolved yet and that all revenues to the city from the Midland Plant are being held in escrow. He did not know the exact amount of the revenues, but indicated that they were substantial. Mr. Schroeder indicated that the city was benefitting financially from the facility, because the costs associated with supplying services to the Midland Plant were

low. The present tax base, as a result of the Dow Chemical Complex, is quite high and the additional tax base from the Midland Plant will make the per capita cost for city services among the lowest in the state.

Mr. Schroeder referred the staff to the Police Department and City Assessor for specifics on traffic, crime rates and assessment rates. He indicated that he would be willing to answer any questions the staff may have later and said that he would contact the NRC if he had any additional questions.

Mr. Thomas Cushard, of Consumers Power Company, and Ms. Mary Sinclair, of Midland, were observers of the meeting, although Ms. Sinclair came in at the conclusion of the meeting.

Members of the staff met to discuss historical and archaeological preservation matters with Dr. Martha Bigelow, Michigan State Historic Preservation Officer, and Mr. John Halsey, Michigan State Archaeologist, at 9:30 AM, Thursday, September 7, 1978, at the offices of the Michigan History Division in Lansing.

Dr. Bigelow indicated that the Michigan History Division's involvement in the Midland Plant case is recent, going back only for the last couple of years. Mr. Halsey indicated that the Division had not received much information on Midland other than Mrs. Louise Wang's report and material from the Chippewa Nature Center.

Some work had been done on Highway 20, at the levee where the road crossed the Tittabawassee River. This site was very limited but did have archaeological materials of interest.

Mr. Halsey indicated that it was his understanding that the natural levee was removed from the Midland Plant site when the Tittabawassee River was dredged during the widening of the river. Thus, it is possible that most of the archaeologically important material would have been lost and the next best potential would be the sand areas (knolls, old beach margins, sand ridges, etc.).

Mr. Halsey stated that the Midland - Bay City - Saginaw area is the richest archaeological area in the State of Michigan. However, he would not expect, with the exception of the Indian village site, that the Midland Plant area would be any more rich, archaeologically, than other locations on the Tittabawassee River.

Regarding the undisturbed area remaining on the Midland Plant site, Mr. Halsey recommended that surveys be conducted using test pits or trenching. He would expect archaeologically significant material to be continuously distributed in this area except for the Bullet Creek outfall, where material might be concentrated. Recognizing the findings

of the Saginaw Archaeological Commission, he also recommended that the southeast corner of the Plant site should be investigated. Collections have been made back, away from the river there, but one wouldn't expect to find much depth to deposits on sand ridges, etc. However, deep deposits might be found on any old levees.

Mr. Halsey pointed out that the sand ridges in the Midland area were being mined, and thus, such sites are disappearing. The Saginaw area's archaeological highlight occurred in the late Archaic and Woodland times. The National Historic Register was consulted. Only three sites are indicated for the Midland area: the Oxbow Archaeological District, the Bradley House, and the Herbert H. Dow House.

Members of the staff met with Mr. Clifford Steff and Mr. Randy Derifield, Midland County Planning Commission, at their offices in the County Road Commission Office Building, at 10:00 AM on Thursday, September 7, 1978, in Midland. The purpose of this meeting was to discuss socio-economic impacts of station operation.

Mr. Steff indicated that he did not believe that there had been any measurable impact to Midland County public services thus far as a result of the Midland Plant. He indicated that if there were any measurable impacts that could be attributed to the plant, they would occur when large numbers of construction workers left the area in a short time span. At present, they are not sure where the construction workers are residing in the County. He indicated that his department is monitoring appropriate factors (e.g., number of trailers northwest and west of the city of Midland) in order to ascertain any associated effects. Mr. Steff did indicate that the number of trailers to the northwest and west of Midland have increased during the construction years; however, his department is not sure this is due to the Midland facility or the fact that these areas have less stringent laws relating to trailers. In and near the city of Midland, the laws are quite restrictive, because trailers are considered to be undesirable dwellings. Mr. Steff will supply the NRC staff with the trailer figures for 1969-1970 and 1976-1977. No impacts to county schools have been detected and none are expected when the Midland Plant operational force moves into the area, since the existing schools can easily assimilate the extra 200 students. Mr. Steff was unaware of any significant increases in crime rates in the county or major traffic problems, but referred the staff to the County Police and Road Commission for details on these matters.

Messrs. Steff and Derifield indicated that Midland County growth has fallen short of the 1969-1970 predicted estimates. While they could not pinpoint the causes precisely, they did indicate some possible causes including water table and local sewage system problems. As anticipated, most of the growth has occurred to the northwest of the city of Midland, partially because of greater recreational opportunities in this area.

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Mr. Steff indicated that financial burdens incurred by the County, as a result of the Midland Plant using county services, were minimal and that the revenues to the County were far greater than the costs. Messrs. Steff and Derifield were concerned about the public perception of nuclear facilities, and the impact of this on property values near the plant. Finally, they indicated a need for better cooperation between utilities, Federal, State and County agencies in the location of transmission corridors. They believed that effective land use planning was very difficult at the County level if transmission corridors were routed without consulting County officials.

Mr. Thomas Cushard, of Consumers Power Company, and Ms. Mary Sinclair, of Midland, attended the meeting as observers.

Members of the staff met with Mr. Gordon Solberg and Mr. William Fortier, Midland County Road Commission, at 1:00 PM, Thursday, September 7, 1978, at their offices in Midland.

In discussing socio-economic impacts as a result of the construction and operation of the Midland Plant, Messrs. Solberg and Fortier indicated that they had just received a breakdown of traffic flow patterns on various county roads around the Midland Plant. They were not aware of any major traffic problems as a result of this facility at the present time. However, they will be analyzing the traffic flow patterns and will send the NRC staff a copy for information. They could not state whether the traffic accident rate had increased on county roads near the plant, but did indicate that the State Police would probably have this information. Messrs. Solberg and Fortier informed the staff that there had been an increase in maintenance costs to Poseyville Road (main North-South road to the Midland Plant) the past two years; however, they were not sure whether this was due to the construction traffic or the bad winters during these two years. The staff was informed that the county had paid for the widening of Poseyville Road just north of the Midland Plant, because these plans were on the books prior to the Midland facility. The applicant did pay for some improvements to Poseyville Road and the traffic light at the intersection of the Midland Plant access road. Mr. Solberg also told the staff that they receive no direct revenues from the Midland nuclear facility. Messrs. Solberg and Fortier said that requests have been made to reclassify roads to reduce loadings, particularly through the city and indicated this could have some effect on which roads would be available for bringing in the reactor vessels. Finally, they informed the staff that they did not know the capacity factors for county roads leading to and from the Midland Plant.

Meteorological issues, relating to the cooling pond and its impact on Gordonville and Poseyville Roads, were also discussed. Messrs. Solberg and Fortier were not aware of any fogging or icing problems to these roads during the spring months when the pond was being filled. They were

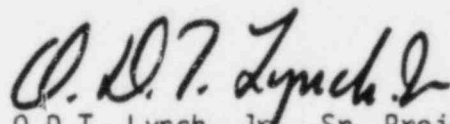
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also not aware of any fogging problems to roads in the vicinity of Dow's pond to the north of the Midland Plant. At present there are no plans to deal with potential fogging or icing problems to Gordonville or Poseyville Roads. Messrs. Solberg and Fortier indicated that the Road Commission had talked to the applicant and were informed there would be no major fogging and icing problems.

They were informed by Dr. James Carson, Argonne National Laboratories, that the Dresden pond in Illinois created major fogging and icing problems to local roads and that several mitigative measures have been employed to reduce the risk of traffic accidents. Dr. Carson indicated that there were sufficient similarities between the Dresden pond and the Midland pond, and also meteorological conditions of the two areas, to indicate that fogging and icing may be a problem, particularly to Gordonville Road. Messrs. Solberg and Fortier seemed quite concerned and indicated that they would approach the applicant regarding the potential problem. They also indicated they may follow-up on Dr. Carson's suggestion to call the LaSalle and Mill County Road Commissions, in Illinois, to learn more about the problems associated with the Dresden pond.

On information regarding traffic accidents on county roads, the staff was referred to the State Police, since they keep statistics in the form of MALI (Michigan Accident Location Index). Both Mr. Solberg and Mr. Fortier indicated that they would be willing to answer any questions the staff may pose later and indicated that they would contact the NRC staff if they had additional questions.

Mr. Thomas Cushard, of Consumers Power Company, Ms. Mary Sinclair, of Midland, and Mr. Patrick A. Race, of the Lone Tree Council, observed the meeting.



O.D.T. Lynch, Jr., Sr. Project Manager
Environmental Projects Branch 2
Division of Site Safety and
Environmental Analysis

Enclosures:
Attendance List
Map

ATTACHMENT 1

MIDLAND PLANT, UNIT NOS. 1 & 2
Docket Nos. 50-329 and 50-330

SITE VISIT ATTENDANCE LIST AND SCHEDULE

1. Site Tour, 8:00 AM - 12:00 Noon, September 6, 1978:

CPC

T. Cushard, R. F. Green, C. A. Hunt, G. A. Dawson, G. S. Keeley,
A. D. Kowalczyk, M. R. Putnam, B. Peck, A. Zeitoun, J. J. Zabritski,
D. L. Anderson, J. J. Rochow, D. Sibbald.

University of Michigan

D. Ozker

Bechtel

J. LeFeure, J. A. Climents, C. Papadakis, R. Block, D. Wheeler.

Dow

J. R. Beverough, R. O. Dorton, E. M. Ilgenfritz.

MDNR

D. P. Tierney, S. M. Taylor, J. J. Cosens, R. Besch, C. M. Bek.

MAG

G. T. Taylor

MERB

F. L. Brown

DOI-F&WS

T. J. Miller

ANL

S. W. Hong, C. LaFrance, W. K. Derickson, S. A. Curtis, K. Hoekstra,
G. J. Marmer.

USNRC

R. O. Gonzales, A. J. Januska, R. R. Romano, O. D. T. Lynch, Jr.,
R. J. Cook.

2. NRC Staff/Applicant Question-Answer Meeting, 1:00 PM, September 6, 1978:

CPC

T. Cushard, R. F. Green, C. A. Hunt, G. S. Keeley, A. D. Kowalczyk,
M. R. Putnam, A. Zeitoun,, J. J. Zabritski, D. L. Anderson, J. J. Rochow.

University of Michigan

D. Ozker

Bechtel

J. LeFeure, J. A. Climents, C. Papadakis, R. Block, D. Wheeler.

Dow

J. R. Beverough, R. O. Dorton, E. M. Ilgenfritz.

MDNR

D. P. Tierney, R. Besch, J. J. Cosens, C. M. Bek, S. M. Taylor.

MAG

G. T. Taylor

MERB

F. L. Brown

DOI-F&WS

T. J. Miller

Midland Daily News

S. Ely

Bay City Times

T. R. Knoy

ANL

W. K. Derickson, S. A. Curtis, S. W. Hong, G. J. Marmer, K. Hoekstra,
C. LaFrance.

USNRC

R. R. Romano, A. J. Januska, R. O. Gonzales, O.D.T. Lynch, Jr.,
R. J. Cook.

3. Saginaw Atchaeological Commission, 4:30 PM, September 6, 1978:

SAC

F. V. Brunett

CNC

Lois Wang

ANL

W. K. Derickson, S. A. Curtis.

USNRC

R. K. Hoefling, O.D.T. Lynch, Jr.

Observers

R. F. Green, CPC, D. Ozker, U of MI, Wm. Wang, P. G. Brunett.

4. Midland City Planning Department, 8:00 AM, September 7, 1978:

MCPD

J. Schroeder

ANL

W. K. Derickson, S. W. Hong.

USNRC

R. J. Cook, W. J. Olmstead.

Observers

T. Cushard, CPC, M. Sinclair.

5. Michigan History Division, 9:30 AM, September 7, 1978:

State Historic Preservation Officer

M. M. Bigelow

State Archaeologist

J. Halsey

ANL

S. A. Curtis

USNRC

R. K. Hoefling, O.D.T. Lynch, Jr.

Observer

R. F. Green, CPC

6. Midland County Planning Commission, 10:00 AM, September 7, 1978:

MCPC

C. Steff, R. Derifield.

ANL

W. K. Derickson, S. W. Hong.

USNRC

R. J. Cook, W. J. Olmstead.

Observers

T. Cushard, CPC

M. Sinclair

7. Midland County Road Commission, 1:00 PM, September 7, 1978:

MCRC

G. Solberg, W. Fortier.

ANL

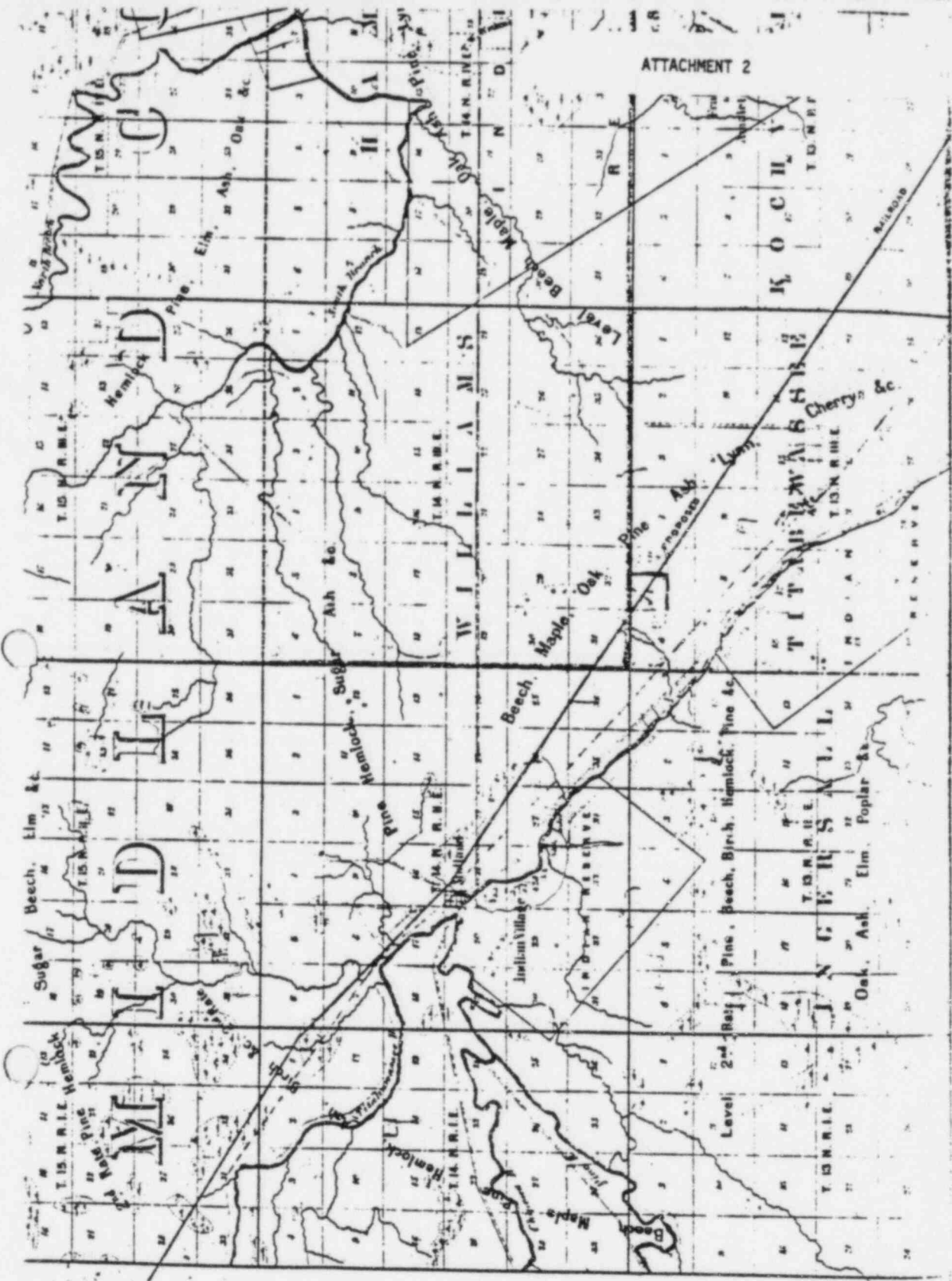
W. K. Derickson, S. W. Hong, J. E. Carson.

JSNRC

R. J. Cook, W. J. Olmstead.

Observers

T. Cushard, CPC, M. Sinclair, P. A. Race, Lone Tree Council.



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17-18-19