October 2003
DOE/EA-1478

DEPARTMENT OF ENERGY
Western Area Power Administration
Finding of No Significant Impact
Hoover Dam Bypass Project Phase II (Double-Circuiting a Portion of the Hoover-Mead No. 5 and No. 7 230-kilovolt (kV) Transmission Lines with the Henderson-Mead No. 1 230-kV Transmission Line
Clark County, Nevada

Summary -- Western Area Power Administration (Western) proposes to double-circuit a portion of the Hoover-Mead No. 5 and No. 7 230-kilovolt (kV) Transmission Lines with the original Henderson-Hoover, to be renamed the Henderson-Mead, No. 1 230-kV Transmission Line (Proposed Action). In addition, a fiber optic cable would be placed as an overhead ground wire on the double-circuited transmission lines from the area of Hoover Dam to Mead Substation. The project would begin Fall 2003 and be completed Spring 2004. A number of resource protection measures are included with the Proposed Action to minimize potential adverse environmental effects.

The availability of the environmental assessment (EA), entitled Western's Hoover Dam Bypass Project Phase II (Double-Circuiting a Portion of the Hoover-Mead No. 5 and No. 7 230-kV Transmission Lines with the Henderson-Mead No. 1 230-kV Transmission Line, Clark County, Nevada (DOE/EA-1478), was announced for a preapproval public and agency review on April 8, 2003. Based on responses to the April 8th announcement, the EA was distributed for preapproval public and agency review on June 10, 2003. The EA was revised based on comments received, and the EA was approved in October 2003. Based on the EA, Western has determined that the proposed transmission line double-circuiting and fiber optic cable placement would not result in any significant environmental impacts, and the preparation of an environmental impact statement (EIS) will not be required. The basis for this determination is described in this Finding of No Significant Impact (FONSI).

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Additional information and copies of the EA and FONSI are available to all interested persons and the public from the person named above. For general information on DOE National Environmental Policy Act (NEPA) activities contact:

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Purpose and Need – The Federal Highway Administration's (FHWA) U.S. Hoover Dam Bypass Project's proposed alignment interferes with Western's existing electric transmission system. Western needs to maintain its transmission system to provide reliable electric transmission service to its customers in Arizona, California, and Nevada. Western proposes to complete the second of two phases to upgrade the existing transmission line that connects the Arizona and Nevada Switchyard and the Mead Substation. The transmission line upgrade was part of the transmission reconfiguration options evaluated in the U.S. 93 Hoover Bypass Project Final EIS (*DOE/EIS-0352*), but since the final configuration was dependent upon the FHWA's decision, the upgrade was not fully evaluated in the EIS.

Project Description – Western proposes to replace approximately 5 miles of the Hoover-Mead No. 5 230-kV Transmission Line (Hoover-Mead No. 5) and approximately 3 miles of the Hoover-Mead No. 7 230-kV Transmission Line (Hoover-Mead No. 7) current single-circuit lattice-steel structures with new double-circuit monopole structures. The old Henderson-Hoover 230-kV Transmission Line (Henderson-Hoover) would become the new Henderson-Mead No. 1 230-kV Transmission Line (Henderson-Mead No. 1) and would be double-circuited with portions of each of these transmission lines. The Henderson-Mead No. 1 would be extended approximately 8 miles for the double-circuiting, and would connect with Western's Mead Substation. New right-of-way, approximately 0.25 miles, would be required for the Henderson-Mead No. 1 when it transfers from double-circuiting with the Hoover-Mead No. 7 to the Hoover-Mead No. 5 at Boulder City Tap. The Henderson-Mead No. 1 would then leave the Hoover-Mead No. 5 and enter the northeastern corner of Mead Substation in a new alignment.

In addition, fiber optic cable would replace the overhead ground wire for the newly double-circuited transmission lines. The fiber optic cable would originate at the Hoover Power House and connect to the Los Angeles Water and Power Switchyard through the underground Control Tunnel. The fiber optic cable would be placed on the Hoover-Mead No. 7, and then transferred to the Hoover-Mead No. 5 via the Henderson-Mead No. 1. When the Henderson-Mead No. 1 separates from the Hoover-Mead No. 5, the fiber optic cable would continue with the Henderson-Mead No. 1 into Mead Substation.

The Proposed Action would be constructed using the resource protection measures described in the EA.

The Public Process – To allow an early and open process for determining the scope of issues and concerns related to the Proposed Action (40 CFR 1501.7), public scoping was provided by Western. Western notified Federal and state agencies, tribes and affected landowners of its determination to prepare an EA and invited comments in a letter dated April 8, 2003. The EA was distributed for a preapproval agency and public review on June 10, 2003. Comments received on the EA have been incorporated and considered in this determination on whether or not to prepare an EIS. Agencies with jurisdiction over the project were invited to become cooperating agencies in a letter dated April 8, 2003. No agencies requested to become a cooperating agency.

Western has met its obligations under the Endangered Species Act (7 U.S.C. 136; 16 U.S.C. 460 et seq., 1973), and the National Historic Preservation Act (NHPA, 16 U.S.C. 470 et seq., 2000).

Alternatives -- DOE's NEPA regulations require that an EA include a discussion of the no action alternative (10 CFR 1021.321(c)). Under the no action alternative, the proposed action would not be implemented. The existing Henderson-Hoover, Hoover-Mead No. 5 and Hoover-Mead No. 7 230-kV transmission lines would be maintained and operated as is with no provisions for a double-circuit reconfiguration. If the reconfiguration was not conducted, the purpose and need of the project would not be met and Western's electrical transmission system would be disrupted.

Two other options that involved removing the A&N Switchyard and replacing a single-phase circuit with a double-phase circuit to the Mead Substation were reviewed and dismissed from full analysis in the EA.

Environmental Impacts -- Western's conclusions about the Proposed Action's environmental impacts are based on information contained in the EA issued in October 2003. The EA is available upon request. In reaching conclusions about the Proposed Action's environmental impacts, Western considered the effects of the Proposed Action, including the resource protection measures proposed with the project.

The existing environment and the potential environmental impacts were identified and evaluated for the following resources:

- Land use
- Biological resources including special status species
- Cultural resources, including places important to Native Americans
- Visual resources
- Air quality
- Water resources
- Geology and Soils including paleontological resources
- Noise
- Socioeconomic resources, including environmental justice
- Health and safety
- Hazardous materials and solid waste

Based on the EA, the environmental protection measures proposed with the project, and the implementation of the measures addressed in a mitigation action plan (MAP) issued with the EA, Western has concluded that the construction and operation of the proposed Hoover Dam Bypass Project Phase II would not result in any significant environmental impacts. The basis for these conclusions is summarized below.

Land Use. Land along the proposed transmission line rebuild is within a utility corridor. Use includes recreational activities within the Eldorado Mountains and Wilderness Suitability Area at the northern end of the Proposed Action. The Proposed Action would cause short-term impacts to recreational activity. However, since the proposed transmission line rebuild would utilize an existing ROW and corridor, no long-term changes to recreational activities are anticipated. Based on this and the resource protection measures incorporated with the Proposed Action, Western has concluded that the Proposed Action would not cause a direct, indirect, or cumulative significant impact to land use.

Biological Resources. The Proposed Action would temporarily disturb about 53 acres of creosote bush-white bursage community. Measures would be implemented with the Proposed Action to minimize vegetation loss including, wherever possible, leaving vegetation in place and maintaining original contours. During construction, it is likely that wildlife would be temporarily impacted by habitat alteration and temporary displacement to avoid construction activities. Such impacts would not lead to disappearance of habitat or cause reductions in wildlife populations. To minimize effects to migratory birds, Western would require the use of biological monitors to inspect areas identified for ground clearing and leveling for active bird nests prior to the start of these activities. Also, during construction, actions would be taken to ensure no migratory birds, their nests, or nest contents would be harmed during construction.

The Proposed Action would increase the potential for bird collisions with the transmission line, especially where the transmission line would cross a desert wash. If collisions are found to be a problem along some transmission line spans, Western would mark these spans to minimize collisions. No bat roosts are known to occur within or adjacent to the anticipated construction zones; therefore, no impacts to bats or their habitat are anticipated.

There are several federally endangered and threatened species listed for Clark County, Nevada. However, for most species, their known geographic ranges and distributions are distant from the project area or the project area does not contain conditions similar to those known to be necessary to support these species. Only the threatened bald eagles (*Haliaeetus leucocephalus*) and the endangered desert tortoise (*Gopherus agassizii*) are known to occur in the project area.

Bald eagles are known to winter in the Lake Mead National Recreation Area (LMNRA), but there are no known nests or communal winter roosts in the project area. Since the Proposed Action is the replacement of an existing transmission line, an increase in collisions would not be expected. Field surveys have identified 431 acres of suitable desert tortoise habitat in the southern five miles of the project area. The Proposed Action would temporarily remove about 32 acres of habitat. This ground disturbance estimate is based on 50 structures being removed and/or replaced and the need for about five miles of access roads that need to be constructed or restored. Western would implement measures to protect tortoises consistent with the MAP

issued by Western for Phase I transmission line modifications for the Hoover Dam Bypass Project.

Based on the above, Western determined in a September 30, 2003, letter to the U.S. Fish and Wildlife Service (USFWS) that the proposed project may affect, but is not likely to adversely affect bald eagles, and may adversely affect the desert tortoise. Based on this determination, on October 22, 2003, the USFWS prepared and issued a biological opinion that concurred with Western's determination for the bald eagle and outlined terms and conditions needed to protect the desert tortoise. The terms and conditions of the biological opinion would be implemented by Western for the Proposed Action and tracked through Western's MAP. With adherence to the biological opinion, Western has concluded that the proposed project would not cause a significant direct, indirect, or cumulative impact to any threatened or endangered species.

Other special status species of interest to the USFWS and/or the state also are known to occur in the project area. Chuckwallas and Gila monsters would be affected by the Proposed Action due to temporary habitat loss. However, the effects would be minimized by implementing the measures set forth in the "Gila Monster Protocol for Minimizing Impacts on the Construction Site" established by the Nevada Division of Wildlife on April 11, 2003. Thus, no significant impacts to the chuckwallas or Gila monsters would occur. For peregrine falcons, Western would coordinate with FHWA on a monitoring program and restrict construction during breeding season if an active peregrine falcon nest were located within one-quarter mile of the project area. As a result, no significant impacts to the peregrine falcon would be expected.

Desert bighorn sheep may react to increased human activity during construction. However, construction activities would occur within the Eldorado Mountains where desert bighorn are habituated to humans and are accustomed to human activities. Any effects to this species during construction would be immediate and would not likely have a residual, adverse effect. Lambing would not be affected because the project is not located in a known lambing area and, if it does occur, ewes would be unlikely to abandon the area and lambing success would not likely be affected.

A major bighorn movement corridor has been identified as crossing the project area. Summer construction could add stress to sheep at a time of high temperatures when water availability is important. Since the majority of the construction is planned for Fall 2003 and Winter 2004, the summer months when bighorns are stressed the most and the majority of the lambing season would be avoided. Impacts to the rosy twotone beardtongue, Las Vegas bearpaw poppy, western burrowing owl, and bat species would be negligible, because important habitat features for these species are not present in the project area.

Considering the resource protection measures planned for the Proposed Action, and the mitigation commitments outlined in Western's MAP, Western has concluded that the Proposed Action would not cause vegetation or wildlife populations of a regional or local species to be reduced to the point where it could be listed as a species of concern, damage ecological processes to the extent that the ecosystem is no longer sustainable or biodiversity is impaired, cause the habitat necessary for all or part of the life cycle of a species (e.g., lambing areas, migratory corridors) to disappear, or adversely affect a listed threatened or endangered species.

Therefore, there would not be any direct, indirect, or cumulative significant impacts to vegetation or wildlife from the Proposed Action.

Cultural Resources. As a result of the previous cultural resource surveys and pedestrian surveys conducted for the Proposed Action, 23 cultural resource sites have been identified within the project area. All but four of these were previously recorded sites. Of the four newly identified sites, two are recommended for National Register of Historic Places (NRHP) eligibility. Each previously recorded site was examined, compared to the current documentation, and reviewed for NRHP eligibility. In addition, 15 isolated occurrences were identified during the field investigations. Of the 19 previously recorded sites, 12 were formerly determined eligible for NRHP listing. These include the Hoover Dam Historic District (26CK3916), the Hoover Switchyard and Transformer Complex (26CK4765), the U.S. Construction Railroad (26CK4046a), a compilation of 18 transmission lines (26CK5180), and eight individual transmission lines (26CK6249, 26CK6250, 26CK6237, 26CK6238, 26CK6240, 26CK6242, 26CK6251, and NV-27-O). The Hoover Dam Historic District has no delineated boundaries and includes each smaller recorded site (i.e. individual transmission lines) along with others away from the project area. The Hoover Switchyard and Transformer Complex includes the Los Angeles and Metropolitan Water and Power District Switchyards in the northern portion of the project area.

Most of the sites are transmission lines that would not be impacted by the Proposed Action. While new access roads may be built under some of these lines, they are not expected to directly or indirectly affect the historic properties. Since its decommissioning in 1961, the U.S. Construction Railroad Bed (26CK4046a) has been used as a temporary access road for several transmission lines. Site 26CK4046a is the only site that may be used temporarily for access during construction. Access would consist of driving over the railroad grade. No improvements would be made to the roadbed and, as a result, there would be no direct or indirect effects to the historic property. In addition, a fiber optic cable extending from the Hoover Dam Control Tunnel would be attached to structures within the Los Angeles Switchyard, but no main or major introduction, reconstruction, or removal would occur in this yard. Since no structures would be replaced, no adverse effect to this site would occur.

Adverse effects would occur at five NRHP-eligible sites. Three sites are transmission lines. Each would have some original structures replaced or modified. The sites are 26CK6237, the Los Angeles Bureau of Power and Light No. 2 Transmission Line (Hoover-Mead No. 7), Site 26CK6240, the Metropolitan Water District Line No. 1 (Hoover-Mead No. 5), and Site NV-27-O, the Magnesium Basic No. 1 North Transmission Line (Henderson-Hoover). For both sites 26CK6237 and 26CK6240 there would be a replacement of approximately 15 original structures with new monopole structures. For site NV-27-O, one structure would be replaced and two other structures would be abandoned or removed. Each of these three sites is also included in two larger site designations, which have been determined NRHP-eligible. These are the Hoover Dam Historic District (26CK3916) and the compilation of 18 transmission lines (26CK5180). The replacement of the original steel lattice structures with new structures of a different design would constitute an adverse effect to each of these sites. Western is completing or has completed and approved a Historic American Building Survey/Historic American Engineering Record (HABS/HAER) recording process for each of the historic properties facing adverse effects. As a

result, potential impacts to these five NRHP-eligible sites would be reduced to less than significant.

One of the two newly recorded prehistoric sites has no potential for effects. This site, 26CK6725 (two rock circles and lithics), would be avoided and a tribal and archaeological monitor would be present to ensure avoidance. When conductors are changed out over the site, it would be walked off, not drug through, the site. The other new site, 26CK6726, would be avoided by building a new access road to the northeast of the site, away from the monolith. An ethnographic study, involving interested tribes, would be completed. Tribal and archaeological monitors would be present during all construction at this site. Once the old tower is removed and the new tower installed, the landscape would be restored.

Western has consulted with the Nevada State Historic Preservation Office (SHPO) on the proposed changes to the five historic properties and the two new recorded prehistoric sites described above. With the mitigation efforts at the NRHP-eligible sites described above and included in the Proposed Action's MAP, no significant impacts to cultural resources would occur.

Native American Religious Concerns. An unmitigated adverse effect to a traditional cultural property (TCP) or a burial site would constitute a significant adverse impact. Western consulted with tribes on this project and set up two site visits to help evaluate eligibility and effect to prehistoric sites 26CK6725 and 26CK6726. The tribes included representatives from the Hualapai, Kaibab-Pauite, Fort Mojave, Chemehuevi, Paiute of Las Vegas, and Paiute Indian of Utah tribes. The tribes expanded the site boundary for site 26CK6726, and they identified both sites as traditional cultural properties TCPs. They also identified methods to mitigate the effects of the project to both sites, which has been addressed in Western's MAP. At the request of the tribes, Western would do an ethnographic study of the project.

Gold Strike Canyon, Sugarloaf Mountain, and the Sullivan Turquoise Mine have been identified as places of traditional cultural importance to Native Americans. No effects to these TCPs would occur as they are outside of the project area. Considering the avoidance of known TCPs and the measures outlined by Western in its MAP to mitigate effects to sites 26CK6725 and 26CK6726, no significant impact would occur to Native American Religious concerns.

Visual Resources. The Proposed Action passes steep mountains, and canyons dominate the northern section, while the project's southern portion is composed of a series of washes and ravines and a large relatively flat bajada into the Eldorado Valley. Multiple transmission lines and accompanying access roads bisect the landscape traveling in many directions. Views toward the transmission corridor from Boulder City are limited by the distance of the community from the Proposed Action alignment and the presence of other transmission line infrastructure. The Proposed Action passes through the LMNRA, managed by the NPS. Implementation of the Proposed Action would result in adding long-term elements that would affect the existing landscape, including steel monopole tower structures, conductors, fiber optic cable, and access roads. These facilities are similar to the existing facilities that they would be replacing. Impacts to views from U.S. Highway 93 and Boulder City would not be significant since the proposed project would replace similar infrastructure and would be consistent in both scale and form with

other transmission lines that cross the area. In addition, Western has included measures with its Proposed Action to minimize the visual effects from ground disturbances. Because an existing transmission line would be rebuilt and an important scenic vista would not be affected, the Proposed Action would not significantly impact visual resources.

Air Quality. Construction equipment would produce temporary, short-term exhaust emissions. Dust produced by construction equipment and vehicles would increase local levels of PM_{10}. Because these emissions would be temporary and localized and the proposed action includes measures to abate dust emissions, potential air quality impacts would not result in the area being declared a non-attainment area). As a result, Western has concluded that no direct, indirect, or cumulative significant impacts to air quality would occur from the construction and operation of the Proposed Action.

Water Resources. No impacts would occur to floodplains and groundwater. The proposed transmission line rebuild has the potential to degrade water resources due to stormwater discharges during construction, altering drainage patterns, and impacting area floodplains. Considering the resource protection measures proposed for the project, including ensuring all construction activities minimize disturbance to vegetation and drainage channels, and implementing best management practices to control erosion, Western has concluded that no direct, indirect, or cumulative significant impacts to surface water would occur.

Geology and Soil. Impacts to paleontological resources would be unlikely since sediments within the project area are derived from Precambrian metamorphic rocks, not young sedimentary rocks where paleontological resources are typically found. Potential adverse impacts to geology and soil from the proposed project include increased erosion from runoff and wind due to compaction and loss of vegetation. With the implementation of the resource protection measures proposed with the project, Western has concluded that the proposed transmission line rebuild would not cause severe erosion. Therefore, a direct, indirect, or cumulative significant impact to geology and soil would not occur.

Noise. During construction, noise would be generated by the equipment used for replacing the existing structures. During the transmission line operation, noise generated would best be described as a crackling or hissing sound. During maintenance activities, noise could be generated from a vehicle driving along the access roads for structure and line inspection, a helicopter flying along the ROW for structure and line inspection, or equipment and crew conducting maintenance or repairs. Noise generated from operating and maintaining the Proposed Action would be similar to that currently generated on the existing transmission line. Noise impacts from construction activities would be minor and short-term and be limited by the resource protection measures included with the Proposed Action. As a result, the Proposed Action is not expected to conflict with local noise standards or ordinances. Thus, the Proposed Action would not cause direct, indirect, or cumulative significant noise impacts.

Socioeconomics. Some beneficial socioeconomic impacts would result from construction spending, and to a lesser extent, maintenance worker spending. Workers based in the project area would likely be from Boulder City or in the greater Las Vegas region. Most of the workforce would be temporarily housed in these communities and a portion of their income and expenses

would be spent locally, thus generating secondary income to the affected communities. During construction, about 25 workers would be expected to conduct various tasks over a period of about three months. Because the construction workforce would be small, with no permanent migration to the area, negative effects are not expected for such public services as law enforcement or fire protection. Considering the short duration proposed for construction, construction of the Proposed Action would not induce substantial growth, displace any existing housing, disrupt or divide any communities, or decrease employment. There, no significant impacts to socioeconomics would occur.

Environmental justice has been addressed in accordance with Executive Order 12898. Effects on minorities and Native Americans were considered. Disproportionate impacts on minorities and low-income populations are not expected as a result of the Proposed Action. Since minorities and Native Americans do not comprise a large proportion of the project area's total population, disproportionate cumulative impacts on these groups from the Proposed Action are unlikely.

Health and Safety. During construction, standard health and safety practices would be conducted in accordance with the Occupational Health and Safety Administration's policies and procedures, which would reduce worker safety concerns to less than significant levels. Project activities are not expected to result in unusual safety concerns for workers in the project area. Project implementation would not affect any local or regional emergency response plan or evacuation plan. Therefore, no significant impacts to public or worker safety would be anticipated.

The EA includes an analysis of the potential impacts of the proposed transmission line on radio-frequency interference, photochemical oxidant generation, audible noise, steady-state current shocks, spark discharge shocks, and electric and magnetic field exposure. The long-term, mostly residential magnetic exposure, which is the root of the present health concern, would be insignificant for the proposed transmission line rebuild given the general absence of residences along the proposed transmission line. Public exposures would be short term and at levels expected for similar Western designs and current carrying capacity. Such exposures are well understood and have not been established as posing a health hazard to humans. The potential for nuisance shocks would be minimized through grounding and other field-reducing measures to be implemented in keeping with common industry practices. The use of low-corona line design, together with appropriate corona-minimizing construction practices, would minimize the potential for corona noise and its related interference with radio-frequency communication. Based on the above, Western has concluded that the proposed transmission line would not cause significant adverse impacts related to safety, radio-frequency interference, audible noise, steady-state current or spark discharge shocks, or electric and magnetic field exposure.

Hazardous Materials and Solid Waste. No hazardous emissions or acutely hazardous materials, substances, or waste would be handled near sensitive land uses, such as residences. The proposed project would not require long-term storage, treatment, disposal, or transport of hazardous materials. Based on this and the resource protection measures included with the Proposed Action, Western has concluded that this will not cause significant hazardous material or solid waste impacts.

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Determination -- Based on the analysis in the EA, Western has determined that the terms and conditions from the USFWS's biological opinion, mitigation for the Gila monster and Peregrine falcon, avoidance and monitoring of cultural prehistoric sites, HAER documentation of eligible historic facilities, and preparation of ethnographic report are mitigation measures needed to reduce the potential for a significant environmental impact. The implementation of these measures is addressed in a MAP issued concurrently with the EA. The analyses contained in the EA, along with the mitigation commitments in the MAP, indicate that the proposed action is not a major Federal action significantly affecting the quality of the human environment. Western has determined that preparation of an EIS is not required.

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