Attachment D

Desert Tortoise Translocation/Relocation Plan for the Ivanpah Solar Electric Generating System

Prepared for

Solar Partners I, LLC; Solar Partners II, LLC; Solar Partners IV, LLC; and Solar Partners VIII, LLC

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Contents

1.0 Introduction

Solar Partners I, LLC; Solar Partners II, LLC; Solar Partners IV, LLC and Solar Partners VIII, LLC (the Applicant), which are subsidiaries of BrightSource Energy, Inc., propose to develop a solar power project consisting of three adjacent solar energy facilities to be located in the Ivanpah Valley near the Interstate 15 (I-15) crossing of the California/Nevada border in San Bernardino County, California (Figure BR5-1, figures are located at the end of each section). The proposed project site is located on land administered by the Bureau of Land Management (BLM) and is less than 2 miles east of the Mojave National Preserve, less than 2 miles west of Ivanpah Dry Lake, less than a mile south of the Stateline Wilderness and Mesquite Wilderness areas of the Clark Mountains; approximately 0.5 miles west of the Primm Valley Golf Club; approximately 0.8 miles northwest of I-15; and approximately 4.5 miles southwest of the Primm Valley casinos.

This Desert Tortoise Translocation/Relocation Plan (Plan) has been prepared for the Bureau on behalf of the Applicant following guidelines developed by the U.S. Fish and Wildlife Service (Service).

1.1 Background

The Ivanpah SEGS site is located in Township 17N, Range 14E, and Township 16N, Range 14E on land administered by the BLM. Access to the site is via the Yates Well Road interchange on I-15 and Colosseum Road to the west of the Primm Valley Golf Club. The project will be built in three phases. The first 100-megawatt (MW) plant at the south end of the project, known as Ivanpah 1, would be owned by Solar Partners II, LLC. Solar Partners I, LLC, would own the middle 100-MW plant known as Ivanpah 2. The northernmost 200-MW plant, known as Ivanpah 3, would be owned by Solar Partners VIII, LLC. The three proposed facilities and their shared operations (owned by Solar Partners IV) are collectively known as the "Ivanpah Solar Electric Generating System" or "Ivanpah SEGS" (see Figure BR5-2).

In order to permit the three plants and the common facilities the Applicant has consulted the BLM, Service, California Department of Fish and Game (CDFG) and the California Energy Commission (CEC) the state lead agency under the CEC's California Environmental Quality Act (CEQA) equivalent certified regulatory program.

The total area required for construction and operation of all three solar plant sites including the shared infrastructure is approximately 4,072 acres (minus the acreage for existing established dirt roads equals about 4,065 acres, net). This includes approximately 3,715 acres of permanent effects and approximately 357 acres[1] of work area that would be subject to restoration following construction. Based on the protocol surveys, the proposed action would likely result in the need to relocate about 25 tortoises.

[1] These numbers may be less once the stormwater plan is completed.

1.2 Plan Purpose

This Plan will be incorporated into the Ivanpah SEGS Biological Resources Mitigation, Implementation and Monitoring Plan (BRMIMP), as part of the proposed action. This Plan has incorporated the Guidelines for Clearance and Translocation of Desert Tortoises from the Ivanpah SEGS Project prepared by the Service's Ventura Office as technical assistance for the Project on December 12, 2008 (Service 2008). This document is provided in Appendix A. This Plan, in turn, conforms to the Translocation Guidelines specified in Appendix B of the Desert Tortoise Recovery Plan (Service 1994; reproduced here in Appendix B). Once this Plan meets BLM approval, it will become part of the project's proposed action upon which the Service would base its biological opinion. The BLM will seek CDFG concurrence with this Plan prior to initiating formal Section 7 consultation with the Service. Any necessary, unforeseeable actions taken that are not anticipated by this Plan would be approved by all agencies involved prior to implementation. This would include newly developed adaptive management measures.

The Service's (2008) Guidance (Appendix A) defines "translocation" as when a tortoise must be moved more than 1000 meters to clear it from the project site, while a "relocation" requires a movement of less than 1000 meters. Both are referred to in the Guidance as well as this Plan. In the long-term interests of the tortoise requiring clearance from the site, the preference of all stakeholders is relocating tortoises as long as all other conditions can be met (e.g., density constraints).

1.3 Plan Goals

The goals of this translocation/relocation effort are to:

- Translocate/relocate all desert tortoises from the fenced sites to nearby suitable habitat
- Minimize impacts on resident desert tortoises outside fenced areas
- Minimize stress, disturbance and injuries to translocated/relocated tortoises
- Assess the success of the translocation/relocation effort through monitoring

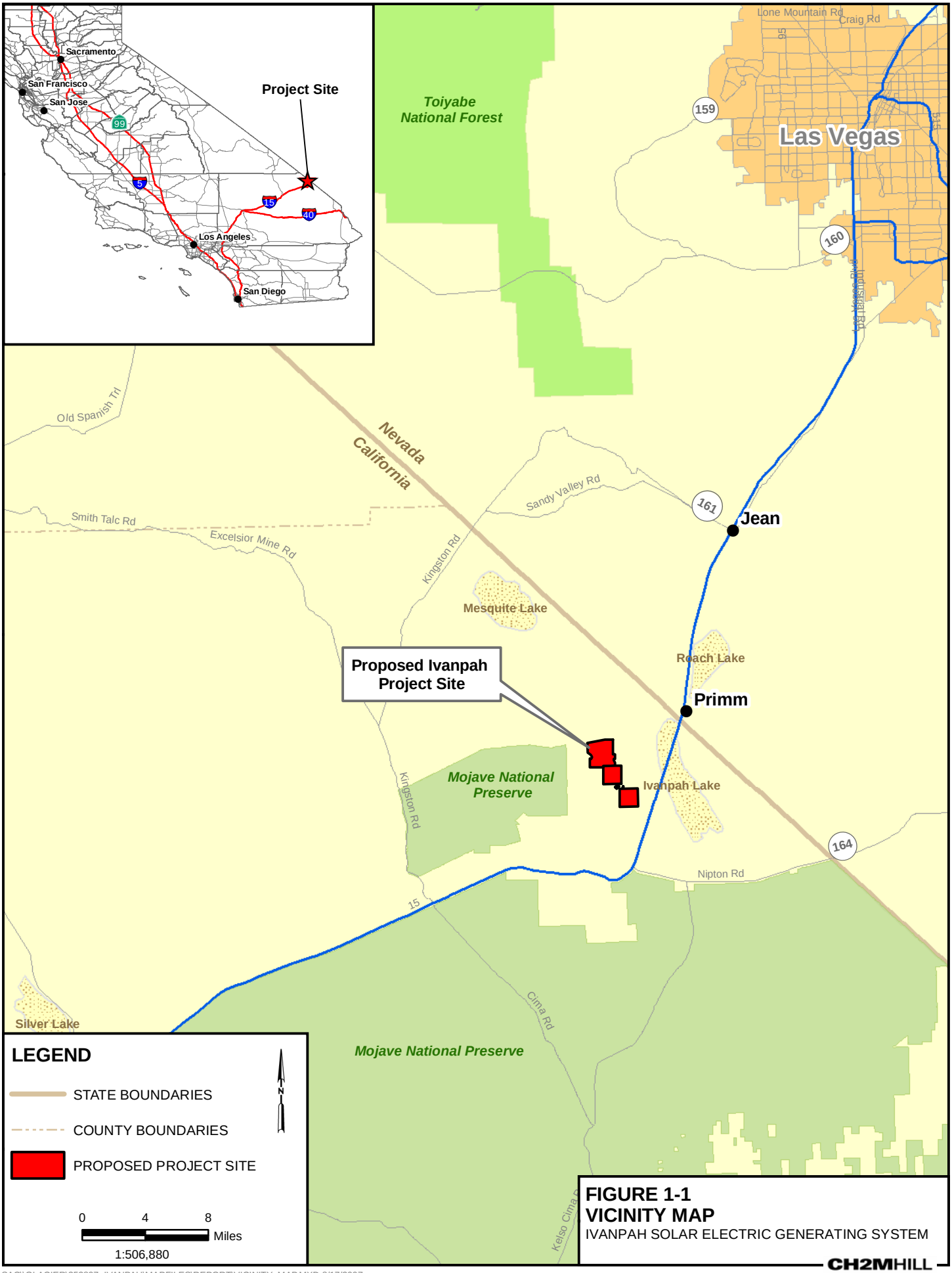

FIGURE 1-1
VICINITY MAP
IVANPAH SOLAR ELECTRIC GENERATING SYSTEM

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TAP STATION

IVANPAH 3

METERING SET

IVANPAH 2

METERING SET

REROUTED COLOSSEUM ROAD

Colosseum Road

ADMINISTRATION AND STORAGE

PROPOSED
MONITORING WELL

SUBSTATION

WELLS

IVANPAH 1

Colosseum Road

Colosseum Road

LEGEND

- WELLS
- DIRT ROAD
- PAVED ROAD
- UTILITIES CORRIDOR
- NATURAL GAS LINE
- GEN-TIE LINE
- KERN RIVER GAS LINE
- 4WD TOURING/TRAILS
- SECTION LINES
- PROJECT SITE

0 3,000 Feet

N

FIGURE 2-1
SITE PLAN AND LINEAR FACILITIES
IVANPAH SOLAR ELECTRIC GENERATING SYSTEM

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2.0 Translocation/Relocation Plan

2.1 Permanent Fencing

Prior to translocation/relocation activities the site boundary of the unit being developed would be permanently fenced with an 8-foot-high chain link fence for security purposes and permanent desert tortoise exclusionary fencing would either be attached to the base of the security fence or installed outside the security fence for construction of linear facilities. In areas where a security fence is not required, such as along Colosseum Road or the access road along the west side of the project going from Colosseum Road to the power blocks in Ivanpah 2 and 3, only a tortoise exclusion fence would be installed. A permanent I-beam design desert tortoise guard would be installed to allow equipment access to the fenced sites and exclude desert tortoises. The specifications for the proposed desert tortoise guard are included in Appendix C. If monitoring indicates that the proposed permanent I-beam barriers for use as desert tortoise guards across roads proves to be ineffective or problematic these barriers would be replaced with another means of exclusion. This would be implemented with input from the permitting agencies if monitoring of the facility indicates that they are needed. Tortoise guards will be maintained and monitored as part of the permanent fence inspections and maintenance.

The boundaries of all areas to be disturbed would be flagged before beginning any activities, and all disturbances would be confined to the flagged areas. All project vehicles and equipment would be confined to the flagged areas. Survey crew vehicles would remain on existing roads. To reduce the potential for tortoise strikes by vehicles, a 35 mph speed limit will be enforced on paved roads and 20 mph speed limit on dirt roads. Disturbance beyond the construction zone would be prohibited except to complete a specific task within designated areas or emergency situations.

Once flagged, the next step prior to any site clearance work is fencing the perimeter of the area to be cleared. Within 24 hours prior to the initiation of construction of the desert tortoise-exclusion fence, a desert tortoise survey would be conducted using techniques providing 100-percent coverage of the construction area and an additional transect along both sides of the fence line transect to provide coverage of an area approximately 90 feet wide centered on the fence alignment. Transects would be no greater than 10 feet apart. Two passes of complete coverage would be conducted. All desert tortoise burrows, and burrows constructed by other species that might be used by desert tortoises, would be examined to determine occupancy. Any burrow within the fence line would be collapsed after confirmation that it is not occupied by a desert tortoise, or if occupied, the desert tortoise has been removed (CH2M HILL 2008).

Next, an approximate 10-foot-wide linear swath of vegetation along the entire outer edge of the area to be developed would be cleared to create an internal perimeter path for installation of either the tortoise fencing, or combined tortoise and security fence. All fencing will be constructed with durable materials (i.e., 11 gauge or heavier) suitable to resist desert environments, alkaline and acidic soils, wind, and erosion. Tortoise

exclusionary fence material will consist of 1-inch horizontal by 2-inch vertical, galvanized welded wire, 36 inches high. This fence material will be buried a minimum of 12 inches below the ground surface, leaving 22 to 24 inches above ground. A trench will be dug to allow 12 inches of fence to be buried below the natural level of the ground. Specifications for desert tortoise-proof fencing are provided in Appendix C and can be found at the following website: http://www.fws.gov/ventura/speciesinfo/protocols_guidelines/docs/dt/DT_Exclusion-Fence_2005.pdf

Where a combined security/tortoise fence is needed, 6-foot-high standard chain link fencing will be placed above the tortoise fence with about 1 inch overlap creating a combined security/tortoise fence about 8 feet tall. The top end of the tortoise fence will be secured to the security fence with hog rings at 12- to 18-inch intervals. Distance between posts will not exceed 10 feet. Concrete footings for metal posts will not be required. The fence is to be perpendicular to the ground surface, or slightly angled away from the road, towards the side encountered by tortoises. After the fence has been installed, excavated soil will be replaced and compacted to minimize soil erosion. Fence installation will be monitored by a desert Tortoise Monitor (TM) and an Authorized Biologist (AB) would be available at all times to move any desert tortoises that are within the path of the fence line work.

Areas requiring permanent fencing include:

- Colosseum Road from the golf club to the Construction Logistics Area (CLA) where the road will be widened and paved
- The portion of the Construction Logistics Area that will be used for construction activities. It is possible that the entire CLA would not need to be fenced at the outset. Figure BR5-3 shows the portion of the CLA that would likely be fenced as part of the initial construction activity. Regardless, permanent fencing would be required around the substation and the Administration/warehouse building.
- The individual heliostat fields
- Gas tap station and gas metering sets

The location of all permanent tortoise exclusion fencing will be identified on construction drawings and preapproved by the permitting agencies prior to the start of construction activities. The installation of permanent tortoise fencing along roadways (e.g., Colosseum Road) would occur as described below for the installation of temporary construction fence, except that permanent fencing would be installed.

Prior to translocation/relocation activities, the Applicant (or Caltrans) will fence the north side of I-15 with desert tortoise-proof fencing from Nipton Road to the Primm Valley Golf Club. The Applicant will work with Caltrans regarding the appropriate location for this fencing along the I-15. The Applicant will also coordinate the location of the proposed Joint Port of Entry in locating this fencing. A records of conversations with Caltrans is provided in Appendix D.

Any damage to the permanent fencing will be repaired immediately. Following installation, the permanent fencing would be inspected bimonthly (i.e., every other month) and after major rainfall events. A major rainfall event would be any rainfall that causes the ephemeral

washes in the project vicinity to flow and thereby potentially damage the fencing. Extra fencing material would be kept onsite to accommodate needed repairs.

2.2 Temporary Construction Fencing

Temporary fencing, such as chicken wire, snow fencing, chain link, and other suitable materials will be used in designated areas to reduce encounters with tortoises on short-term projects. The fencing material will be attached to metal posts with a minimum of 12-gauge steel wire. The grid opening of the wire will not exceed 1 inch by 2 inches and the fence height will be no less than 30 inches. Posts will be metal and not less than approximately 40 inches long. Concrete footings for metal posts will not be required. Because of the short duration of the work, the fencing need not be buried but any high or low points along the wire mesh fence line will be hand-excavated to maintain integrity with the ground. If non-metal fencing is use, it will be staked to the ground at minimum intervals of 10 feet.

Areas that would require temporary construction fencing include:

- Construction of the gas line from the Kern River Gas Transmission tap station to the power block at Ivanpah 1
- Construction of the tap station and gas metering set construction areas
- Construction of any trails or temporary access roads outside of the fenced heliostat fields
- Construction of any transmission lines, other utilities or access roads located outside of the permanently fenced areas that are specifically attributable to the ISEGS project.

The location of temporary construction fencing will be identified on construction drawings and approved by the permitting agencies prior to the start of construction activities.

- Within 24 hours prior to the initiation of construction of the temporary desert tortoise-exclusion fence, a desert tortoise survey would be conducted using techniques providing 100-percent coverage of the construction area and an additional transect along both sides of the fence line transect to provide coverage of an area approximately 90 feet wide centered on the fence alignment. Transects would be no greater than 10 feet apart. Two passes of complete coverage would be conducted. All desert tortoise burrows, and burrows constructed by other species that might be used by desert tortoises, would be examined to determine occupancy. Any burrow within the fence line would be collapsed after confirmation that it is not occupied by a desert tortoise, or if occupied, the desert tortoise has been removed by an AB.
- An AB or TM will be onsite during installation of the temporary desert tortoise fence. If installation of temporary fencing, surveying or clearing is occurring at more than one location, more than one AB may need to be onsite to provide appropriate supervision. After installation of this temporary fencing and prior to initiation of construction activities, an AB and/or TM will perform a pre-construction sweep for desert tortoises. An AB will relocate any desert tortoises found in the project impact area. Desert tortoises will be moved to suitable habitat outside the impact area and placed in a natural or artificial burrow or under a shrub, depending on time of day and year. An AB

will also be available to relocate any desert tortoises that may wander into the impact area during construction.

- To avoid any additional disturbance beyond what is proposed, the undisturbed areas outside the temporary desert tortoise exclusion fence will be designated Environmentally Sensitive Areas. All construction activities will be confined within the fenced project impact area. Equipment or personnel will not be allowed within the Environmentally Sensitive Areas.
- Prior to performing onsite work, all personnel involved in the construction project will participate in Worker Environmental Awareness Program (WEAP) training that includes desert tortoise protection training approved by the permitting agencies. At a minimum, training will include discussion of the fragility of desert habitats, the importance of the desert tortoise to the environment, the protections afforded to the desert tortoise by the Endangered Species Act, locations of Environmentally Sensitive Areas, and the correct protocol to follow should a desert tortoise be encountered.
- Once temporary exclusion fencing has been installed, the area within the temporary fencing may be mowed to facilitate access by the construction equipment. Unlike installation of the permanent fencing, clearing of vegetation would not be done for installation of the temporary fence. Vegetation clearing would be limited to the areas required for construction.
- At the end of each working day, the contractor will inspect the integrity of all temporary desert tortoise fencing to ensure that desert tortoises are prohibited from entry. If the fence is compromised, repairs must be completed at that time. Extra fencing material will be kept onsite during periods when construction requiring the use of temporary fencing is occurring.
- Prior to the start of work each day the AB or TM will re-check the site to ensure that it is clear of tortoises. If work in the area has been delayed more than 24 hours (e.g., weekend or due to a storm), a more detailed search for tortoises will be required prior to the start of work.
- Open trenches, auger holes, or other excavations that may act as pit-fall traps will be inspected by an AB before back filling. Any desert tortoise found will be safely removed and relocated out of harm's way by an AB. For open trenches, earthen escape ramps will be maintained at intervals of no greater than 0.25 mile. The open trenches will be inspected three times per day (four times per day during the summer) by a qualified biologist. Other excavations that remain open overnight will be covered to prevent them from becoming traps.
- Project personnel will carefully check under parked vehicles and equipment for desert tortoises before operation. An AB will move desert tortoises found within the parking, staging, construction or other traffic areas to a location away from danger and only as specified in the biological opinion.
- At water and trash sources, measures will be implemented by the AB to preclude access by common ravens (*Corvus corax*). Trash will be placed in sealed containers and emptied at the close of business each day. Each water source will be caged. Fencing and netting

will prevent desert tortoises and common ravens from accessing water sources in construction areas.

- If a desert tortoise that is either dead, injured, or entrapped, is found, the contractor will immediately notify the AB/TM who will then immediately notify the permitting agencies directly or through the CEC's biology staff. Work in the immediate area will be temporarily halted while the AB consults with the permitting agencies. Any entrapped desert tortoise will be permitted to escape. The disposition of any carcasses or recovery of dead animals will be coordinated through the CEC.
- If a desert tortoise is injured during the course of construction, the CEC will be notified and the AB will transport the animal to a qualified veterinarian[2]. If a desert tortoise is killed during the course of construction, it will be left in place as is and the permitting agencies will be notified. The AB will document and remove the carcass.

2.3 Clearance Surveys of Permanent Exclusion Areas

Within 72 hours after the area to be cleared is fully enclosed with combined security and/or tortoise fencing, a desert tortoise clearance survey would be performed per Service protocol (Service 1992) and recent Guidelines (Service 2008). Two complete passes with complete coverage would be conducted as described above. If no desert tortoises are observed during the second survey, a third survey would not be conducted. Each separate survey would be walked in a perpendicular direction to allow opposing angles of observation. If a desert tortoise is located on the second survey, a third survey would be conducted. Once the area surveyed is deemed free of desert tortoises the areas may be open to a vegetation salvage program, if the BLM desires to do so (CH2M HILL 2008).

The ABs would be primarily responsible for the clearance surveys. Some ABs may be substituted with TMs who would be placed between ABs during the surveys. Once the sites are deemed free of desert tortoises after at least two consecutive clearance surveys then heavy equipment would be allowed to enter the construction site to perform earth work such as clearing or cutting vegetation, grubbing, leveling, and trenching. A TM would monitor initial clearing and grading activities to find and relocate any tortoises missed during the initial tortoise clearance survey. Should a tortoise be discovered, then the AB would be responsible for relocating it outside the fence or translocating it.

The specific instructions for handling and processing of tortoises as outlined in the Guidelines for Handling Desert Tortoises During Construction Projects (Desert Tortoise Council, 1999) will be followed. The ABs will maintain a record of all desert tortoises encountered and relocated or translocated during project surveys and monitoring. This information would include for each individual: the location (narrative, vegetation type, and maps) and dates of observations; borrow data; general conditions and health; measurements; any apparent injuries and state of healing; if moved, the location from which it was captured and the location in which it was released (whether animals voided their bladders); and diagnostic markings (i.e., identification numbers).

[2] A list of licensed veterinarians in the Las Vegas area who treat desert tortoises can be found on the internet at: http://www.deserttortoise.org/answeringquestions/appendix2.html

All potential desert tortoise burrows located would be excavated by hand by an AB, desert tortoises removed, and collapsed or blocked to prevent occupation by desert tortoises. The AB would also search for desert tortoise nests/eggs, which are typically located near the entrance to burrows. All desert tortoise handling and removal, and burrow excavations, including nests, would be conducted by ABs in accordance with the Service-approved protocol (Desert Tortoise Council 1994, revised 1999). If the Desert Tortoise Council releases a revised protocol for handling of desert tortoises before initiation of project activities, the revised protocol would be implemented for the project (CH2M HILL 2008).

All Service (2008) Guidelines for clearance surveys (Appendix A) will be followed.

2.4 Transportation and Release

Activities addressed here include excavation, handling, and artificial burrow construction.

All potential desert tortoise burrows within the fenced area would be searched for presence. In some cases, a fiber optic scope may be used to determine presence or absence within a deep burrow. Burrows inhabited by tortoises would be excavated by ABs or by TMs supervised by an AB using hand tools. To prevent reentry by a tortoise or other wildlife, all burrows would be collapsed once absence has been determined. Tortoises excavated from burrows would be relocated or translocated to unoccupied natural or artificial burrows outside the fenced site immediately following excavation. Prior to excavating and transporting a tortoise a suitable burrow will have been located, or an artificial burrow constructed, to expedite the process and minimize handling time. The receiving burrow will be of the same size and orientation as the original burrow. The final determinations on placement of relocated/translocated tortoises would take place during Service-approved protocol level surveys of the areas prior to handling activities.

Tortoise excavation, handling, artificial burrow construction, egg handling and other procedures would follow those described in the *Guidelines for Handling Desert Tortoise During Construction Projects* (Desert Tortoise Council, 1994 (Revised 1999)). Processing of tortoises found during the clearance surveys will be done in an appropriate facility to provide shade, should temperatures require such. A processing facility may use temporary shade structures (e.g., E-Z Ups) or a temperature-controlled facility (e.g., a recreational vehicle).

If desert tortoises need to be moved at a time of day when ambient temperatures could harm them (less than 40 degrees Fahrenheit (°F) or greater than 90 °F), they would be held overnight in a clean cardboard box or plastic tote. These tortoises would be kept in the care of the AB under appropriate controlled temperatures and released the following day when temperatures are favorable. All cardboard boxes would be appropriately discarded after one use and never hold more than one tortoise. Plastic totes will be disinfected with a 20 percent bleach solution.

Data will be collected on all tortoises handled, as described above. They will also be photographed and closely examined for clinical signs of animal disease at the time of capture. All ABs and TMs performing examinations for health characteristics would be required to have experience identifying the clinical signs of URTD, herpes virus, and cutaneous dyskeratosis in tortoises. Desert tortoises will be transported in clean cardboard

boxes or plastic tote. If a cardboard box is used, a new box would be used for each individual tortoise and would be properly discarded after a single use. If a plastic tote is used, it will be sterilized with a 20 percent bleach solution between each use. The new burrow would be located at least 300 feet from the outside of the permanently fenced sites and would be of similar size, shape and orientation to the original burrow. The new burrow locations would be determined by the AB. Relocated tortoises would not be placed in existing occupied burrows.

The ABs would wear disposable surgical gloves when handling desert tortoises. A new pair would be donned for each tortoise handled to avoid the transmission of upper respiratory tract disease (URTD). Shell notching would not be performed. Any equipment used to handle tortoises will be sterilized with a 20 percent bleach solution between each use.

All Service (2008) Guidelines for transportation and release (Appendix A) will be followed unless modified herein. All standard handling procedures, such as keeping desert tortoises upright during handling, will be followed by the ABs and TMs.

Per the protocol, tortoises that can be relocated will be moved less than 1,000 meters to the west side of the project fencing within the relocation area (see Figure BR5-3). The translocation area beyond 1,000 meters would be used to accommodate all project-site desert tortoises that cannot be moved to safe locations within 1,000 meters of their capture location. Should it be determined that a tortoise needs to be transported more the 1,000 meters it will be relocated within the preferred translocation area as specified by the agencies approving this plan. Once the agencies concur as to the location of the translocation areas, they will be assessed as to their habitat suitability and a technical memo prepared documenting the findings. The memo will also describe the presence or absence of potential desert tortoise predators observed during the habitat characterization. This habitat characterization will be done to confirm that the proposed translocation areas are suitable to sustain tortoises.

The translocation areas will be surveyed to estimate tortoise densities and the distribution of resident tortoises prior to the relocation/translocation activities. Surveys will be conducted using Service protocols. The results of these surveys will be used to determine whether the area meets the requirement of having a density of resident and relocated/translocated tortoises that does not exceed 39 tortoises per square kilometer. The first protocol survey would be within the one square kilometer translocation area for Ivanpah 1 to determine tortoise density, distribution, and further assess habitat suitability. If this area were determined to meet the relocation criteria, the subject tortoises would be relocated to this area. The survey results will also be used to determine the placement of translocated tortoises with an emphasis on avoiding resident tortoises and active burrows as well as areas supporting potential predators, most notably ravens. Subsequent protocol surveys would be conducted in one square kilometer areas of suitable habitat prior to the development of each of the Ivanpah SEGS units. An additional one square kilometer area will be surveyed at the time the Ivanpah 1 translocation area is surveyed to provide a pre-approved area should additional space be needed. Hence, prior to the commencement of the translocation activities, at least two 1-square-kilometer areas will have been surveyed and pre-approved.

As shown in Figure BR5-3, four 1-square-kilometer areas have been initially identified. This provides an area for each of the Ivanpah SEGS units, with an additional area as a reserve, should the first area have insufficient capacity. As stated earlier, once the initial translocation areas are approved by the agencies, the habitat assessment of those areas will be performed and a technical memo of the results prepared. A copy of the proposed habitat assessment protocol is included as Appendix E.

The survey results of the proposed translocation areas will be submitted to the permitting agencies prior to the commencement of each construction phase. This will ensure these proposed locations are in a suitable area.

2.5 Scheduling

Construction of the generating facility, from site preparation and grading to commercial operation, is expected to take place as early as late Fourth Quarter of 2009 to the Fourth Quarter of 2013 (48 months total). It is anticipated that Ivanpah 1 (southern site) will be constructed first, followed by Ivanpah 2 (middle site), then Ivanpah 3 (northern site), though the order of construction may change. Construction of the shared facilities would occur with the first plant.

Translocations/relocations will take place in the fall (i.e., late August/September to October/November) and in the spring (i.e., March/April – May) to avoid extremely high thermal conditions (Cook et al. 1978, Nussear 2004, *in* Esque et al. 2005). No desert tortoise would be captured, moved, transported, released, or purposefully caused to leave its burrow for whatever reason when the ambient air temperature is above 95ºF (35ºC). Ambient air temperature would be measured in the shade, protected from wind, at a height of 2 inches (5 centimeters) above the ground surface. No desert tortoise would be captured if the ambient air temperature is anticipated to exceed 95ºF (35ºC) before handling and relocation can be completed. If the ambient air temperature exceeds 95ºF (35ºC) during handling or processing, desert tortoises would be kept shaded in an environment that does not exceed 95ºF (35ºC), and the animals would not be released until ambient air temperature declines to below 95ºF (35ºC). As stated in the Service (2008) Guidelines (Appendix A, item I.F), "BrightSource must obtain approval of the translocation area and timing of the translocation activities from the Service, CDFG, and the Bureau prior to initiating any translocation activities."

2.6 Translocation/Relocation Areas

Tortoises will be translocated/relocated in the Ivanpah Valley adjacent to the site areas or in areas depicted in Figure BR5-3. This area meets the Guidelines provided by the Service (2008). Tortoises excavated from burrows would be relocated to unoccupied natural or artificial burrows outside the fenced sites immediately following excavation. Prior to translocation and relocation activities this area will be surveyed to locate suitable unoccupied burrows and/or construction of a sufficient number artificial burrows. Ideally all tortoises would be relocated to within 1000 meters of the site(s). The primary constraint is that resident and relocated desert tortoises do not exceed 39 individuals per square kilometer. To obtain approval for the proposed translocation area, a habitat assessment will be

conducted to determine whether habitat of the proposed translocation area is suitable to sustain tortoises. The proposed protocol for this assessment is provided in Appendix E.

All Service (2008) Guidelines for the selection of translocation/relocation area (Appendix A) will be met. Included in the Service (2008) Guidelines in item II.B.3 are guidelines to ensure proper rehydration. Further, as stipulated in these Guidelines (item I. F); "BrightSource must obtain approval of the translocation area and timing of the translocation activities from the Service, CDFG, and the Bureau prior to initiating any translocation activities. Translocations shall not be permitted if these agencies determine that environmental conditions such as an extended drought might significantly reduce the survival of the translocated desert tortoise."

2.7 Monitoring and Reporting

To monitor for survivorship and health, for a period of 3 years following their translocation/relocation, the desert tortoises will be located at least monthly by the AB. In order to locate all translocated/relocated tortoises, it will be necessary that they be marked and fitted with radio transmitters. Tortoises would be marked with Passive Integrated Transducer (PIT) tags (Gibbons and Andrews 2004) (e.g., Biomark model TX1400L); 2) fitted with an external label (ASIH 2004), and 3) have a light-weight radio transmitter attached with a battery life of at least one year (e.g., Holohil model AI-2F). This redundant method of marking tortoises ensures that tortoises are easily identified by field workers, even in the case of predation or shell wear. Transmitters will be attached using methods similar to those described in Boarman et al. (1998). All transmitters would be removed at the end of this monitoring period.

Juvenile tortoises located during clearance surveys would be treated differently than adult tortoises. Before being released, all juvenile tortoises located would be affixed with specially designed radio transmitters that are small enough to minimize stress. Due to the small size of these transmitters and the subsequent short battery life, these juvenile transmitters will have to be exchanged out approximately every 10 weeks. Juveniles will also be marked using either a Passive Integrated Transducer (PIT) tag and/or fitted with an external label using appropriate standards (ASIH 2004) (adapted from Esque et al. 2005).

Upon locating the translocated/relocated tortoises, all pertinent information will be recorded, such as behavior, physical characteristics, health characteristics, as well as any potential anomalies the individual desert tortoise might display. All ABs and TMs performing examinations for health characteristics would be required to have experience identifying the clinical signs of URTD, herpes virus, and cutaneous dyskeratosis in tortoises. As stated in the item II.A.5 of the Service (2008) Guidelines, "the authorized biologist(s) will remove and quarantine any desert tortoises showing clinical signs of disease. They must then contact the Service within 24 hours to determine the disposition of these individuals." Quarantined tortoises will be kept in a temperature-controlled area away from all other tortoises that are being processed for translocation. The AB will be responsible to ensure that quarantined tortoises have adequate food. If blood testing is warranted, a licensed

veterinarian in the Las Vegas area[3] will be used to draw blood and ship it to an appropriate laboratory for testing.

All observations will be reported to the AB who will record the following information for the monthly compliance report: (1) species name; (2) location (global positioning system coordinates, narrative and maps) and dates of observations; (3) general condition and health, including injuries and state of healing; (4) diagnostic markings, including identification numbers or markers; and (5) locations moved from and to.

All Service (2008) Guidelines for monitoring and reporting (Appendix A) will be followed unless modified herein. Including the requirements in item III.2 about adaptive management should abnormally high mortality rates among the translocated desert tortoises occur. Hence, if monitoring shows a mortality rate of 10 percent or higher among the translocated population, the project owner will consult with the permitting agencies to develop a remedial action plan prior to further phased translocation activities.

[3] A list of licensed veterinarians in the Las Vegas area who treat desert tortoises can be found on the internet at: http://www.deserttortoise.org/answeringquestions/appendix2.html

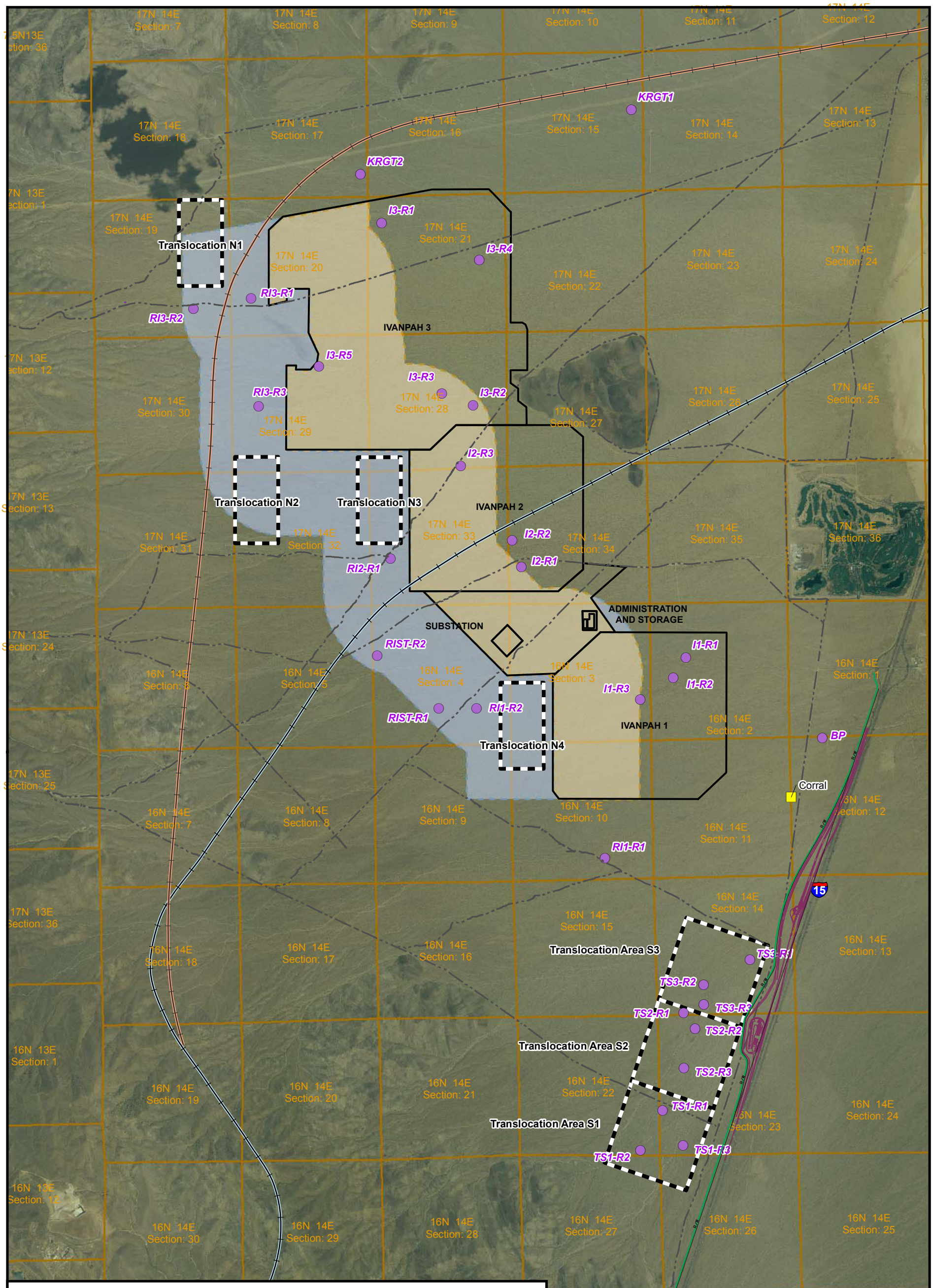

FIGURE 4-3
VEGETATION SAMPLING FOR PROPOSED DESERT TORTOISE RELOCATION AND TRANSLOCATION AREAS
IVANPAH SOLAR ELECTRIC GENERATING SYSTEM

CH2MHILL

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