

	A	B	C	D	E	F	G	H
1	<i>Table AR-2</i>							
2	<i>Asset Renewal Underground Line Work</i>							
3	System Additions	Projected In-Service Year	Project Status	Planning Zone	MISO MTEP Appendix Status	MTEP PRJID	MTEP Cost or Cost Range (M\$)	Scope
4	Mackinac - Mc Gulpin 138 kV (9901 and 9903), submarine cable replacement	2021	Proposed	2	targeted A 18	15145	170.00	Remove and Replace Existing Fluid Dielectric Insulated 138 kV Cables connecting Mackinac and Mc Gulpin Substations. - Remove the three electrically inoperable (2 severed and 1 electrically damaged) Fluid Dielectric Insulated 138 kV cables. - Replace them with a new Solid Dielectric insulated circuit operated at 138 kV. - Remove the three operational Fluid Dielectric Insulated 138 kV cables. - Replace them with a new Solid Dielectric insulated circuit operated at 138 kV. - Construct on shore Riser Termination facilities compatible with the new Solid Dielectric Insulated cables.
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7	<i>Table AR-6</i>							
8	<i>Asset Renewal Transformer Replacements</i>							
9	System Additions	Projected In-Service Year	Project Status	Planning Zone	MISO MTEP Appendix Status	MTEP PRJID	MTEP Cost or Cost Range (M\$)	Scope
10	Shoto SS - Transformer (T1) and Breaker Asset Renewal	2021	Proposed	4	targeted A 18	14988	5.70	Retire existing T1 station power transformer due to performance and install new. -Include provisions to quickly replace T2 Install new low side breakers for T1 and T2 on 69kV adjacent bay. Retire existing 69kV K-11 and C-55 OCBs, replace and relocate new SF6 breakers and arresters.
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13	<i>Table AR-9</i>							
14	<i>Other Asset Renewal Projects</i>							
15	System Additions	Projected In-Service Year	Project Status	Planning Zone	MISO MTEP Appendix Status	MTEP PRJID	MTEP Cost or Cost Range (M\$)	Scope
16	Small Capital Project and Asset Renewal 2020 (Various Projects)	2020	Proposed	Various	targeted A 18	14908	35.33	Replacement of aging or end-of-life equipment to maintain safety, reliability and compliance. Initial capital spend for this program expected to be initiated in 2020.
17	Communication Reliability Upgrades 2020	2020	Proposed	Various	targeted A 18	14910	16.14	Replacement or upgrade of existing substation communication networks (e.g. SCADA, Relay Protection and OPGW Communication Systems). Initial capital spend for this program expected to be initiated in 2020.
18	Line Clearance Mitigation Projects 2020	2020	Proposed	Various	targeted A 18	14912	13.10	Replacement or upgrade of existing equipment to provide adequate clearance to maintain ratings for present and forecasted needs. Initial capital spend for this program expected to be initiated in 2020.
19	Physical Security 2020	2020	Proposed	Various	targeted A 18	14914	9.67	Replacement and/or enhancement of equipment with newer technology to harden the substation infrastructure and maintain physical integrity of the site. Initial capital spend for this program expected to be initiated in 2020.
20	Small Capital Project and Asset Renewal 2021 (Various Projects)	2021	Proposed	Various	targeted B 18	14909	32.97	Replacement of aging or end-of-life equipment to maintain safety, reliability and compliance. Initial capital spend for this program expected to be initiated in 2021.
21	Communication Reliability Upgrades 2021	2021	Proposed	Various	targeted B 18	14911	1.74	Replacement or upgrade of existing substation communication networks (e.g. SCADA, Relay Protection and OPGW Communication Systems). Initial capital spend for this program expected to be initiated in 2021.
22	Line Clearance Mitigation Projects 2021	2021	Proposed	Various	targeted B 18	14913	14.00	Replacement or upgrade of existing equipment to provide adequate clearance to maintain ratings for present and forecasted needs. Initial capital spend for this program expected to be initiated in 2021.
23	Physical Security 2021	2021	Proposed	Various	targeted B 18	14915	9.63	Replacement and/or enhancement of equipment with newer technology to harden the substation infrastructure and maintain physical integrity of the site. Initial capital spend for this program expected to be initiated in 2019.
24	Small Capital Project and Asset Renewal 2022	2022	Proposed	Various	targeted B 18	14964	30.49	Replacement of aging or end-of-life equipment to maintain safety, reliability and compliance. Initial capital spend for this program expected to be initiated in 2022.
25	Communication Reliability Upgrades 2022	2022	Proposed	Various	targeted B 18	14965	8.85	Replacement or upgrade of existing substation communication networks (e.g. SCADA, Relay Protection and OPGW Communication Systems). Initial capital spend for this program expected to be initiated in 2022.

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26	System Additions	Projected In-Service Year	Project Status	Planning Zone	MISO MTEP Appendix Status	MTEP PRJID	MTEP Cost or Cost Range (M\$)	Scope												
27																				
28	Line Clearance Mitigation Projects 2022	2022	Proposed	Various	targeted B 18	14966	7.10	Replacement or upgrade of existing equipment to provide adequate clearance to maintain ratings for present and forecasted needs. Initial capital spend for this program expected to be initiated in 2022.												
29	Physical Security 2022	2022	Proposed	Various	targeted B 18	14967	9.17	Replacement and/or enhancement of equipment with newer technology to harden the substation infrastructure and maintain physical integrity of the site. Initial capital spend for this program expected to be initiated in 2022.												
30	<table border="1"> <thead> <tr> <th colspan="2">Legend</th> </tr> </thead> <tbody> <tr> <td>31</td> <td></td> </tr> <tr> <td>32</td> <td></td> </tr> <tr> <td>33</td> <td>No Shading = No change to project since previous Assessment</td> </tr> <tr> <td>34</td> <td>Orange Shading = new project, was not in previous Assessment project list</td> </tr> <tr> <td>35</td> <td>Gray Shading = some change (e.g. In-service year or scope) since previous Assessment</td> </tr> </tbody> </table>								Legend		31		32		33	No Shading = No change to project since previous Assessment	34	Orange Shading = new project, was not in previous Assessment project list	35	Gray Shading = some change (e.g. In-service year or scope) since previous Assessment
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