ASSIGNMENT 1

1. PROCESS

- ✓ Distinguished working days and rest days, the rest day in the eastern region is Saturday and Sunday, and the rest day in the western region is only Sunday.
- ✓ Got NERC holidays using R's built-in functions "holidayNERC". Adjusting the number of working days and rest days for holidays.
- ✓ Calculated hours under different peaktypes according to rules.
- ✓ Considered the effects of daylight saving time.
- ✓ Calculated hours based on input time.

2. RESULTS

The following figure shows some test results of this function:

```
> get.hours("CAISO","offpeak","2022Mar")   > get.hours("CAISO","flat","2022Q1")
$iso                                        $iso
[1] "CAISO"                                 [1] "CAISO"

$peak.type                                  $peak.type
[1] "offpeak"                               [1] "flat"

$start.date                                 $start.date
[1] "2022-03-01"                            [1] "2022-01-01"

$end.date                                   $end.date
[1] "2022-03-31"                            [1] "2022-03-31"

$num.hour                                   $num.hour
[1] 311                                     [1] 2159
> get.hours("CAISO","offpeak","2022A")      > get.hours("MISO","flat","2022Mar")
$iso                                        $iso
[1] "CAISO"                                 [1] "MISO"

$peak.type                                  $peak.type
[1] "offpeak"                               [1] "flat"

$start.date                                 $start.date
[1] "2022-01-01"                            [1] "2022-03-01"

$end.date                                   $end.date
[1] "2022-12-31"                            [1] "2022-03-31"

$num.hour                                   $num.hour
[1] 3848                                    [1] 744
```

Figure 1: test results of get.hours function