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# == NESM_Load_Shape_Analysis(PJM+ECAR)-step3.scc ==#
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# == Read Data ==#
options(object.size=50000000000)
year <- c(1991:1998, 2050:2055, "90s", "50s")
name.load <- paste("c:/my stuffs/my research/epa/capacityexpansion/data/PJM_ECAR_load_90_55_05
_NEMS_allyear1201.txt", sep="")
data.load <- read.table(name.load, sep="\t", header=F)

data.load[,29] <- apply(data.load[, c(1,3,5,7,9,11,13,15)], 1, mean) #average over 90s#
data.load[,30] <- data.load[, 2]
data.load[,31] <- apply(data.load[, c(17,19,21,23,25,27)], 1, mean) # average over 50s #
data.load[,32] <- data.load[, 2]

for ( y in 1:16)
{
  begin <- 2*(y-1)+1
  end <- begin+1
  data.load.yr <- data.load[, c(begin:end)]
  names(data.load.yr) <- c("load","ozone")
  data.load.yr <- sort.col(data.load.yr, c(1:2), c(2,1), ascending=F)
#== Ozone Period ==#
  data.load.yr.ozone <- data.load.yr[data.load.yr$ozone==1,]
  data.load.yr.ozone$percentage <- c(1:3600)/3600
  cutoff <- approx(data.load.yr.ozone$percentage, data.load.yr.ozone$load, c(1/3600, 0.01, 0.05, 0.10,
0.20, 0.30, 0.40, 0.50, 0.65, 0.80, 1))$y
  block <- matrix(0, 20, 2)
  for (b in 1:(length(cutoff)-1))
  {
    data.load.yr.ozone.block <- data.load.yr.ozone[data.load.yr.ozone$load<=cutoff[b] &
data.load.yr.ozone$load>=cutoff[b+1], ]
    block[b,1] <- round(mean(data.load.yr.ozone.block$load),0)
    block[b,2] <- dim(data.load.yr.ozone.block)[1]
  }
  block[1,1] <- round(max(data.load.yr.ozone$load),0)
  block[10,2] <- 3600- sum(block[c(1:9),2]) #sum to 3600

# == Winter Period ==#
  data.load.yr.win <- data.load.yr[data.load.yr$ozone==0,]
  data.load.yr.win$percentage <- c(1:dim(data.load.yr.win)[1])/dim(data.load.yr.win)[1]
  cutoff <- approx(data.load.yr.win$percentage, data.load.yr.win$load, c(1/3600, 0.01, 0.05, 0.10,
0.20, 0.30, 0.40, 0.50, 0.65, 0.80, 1))$y
  for (b in 1:(length(cutoff)-1))
  {
    data.load.yr.win.block <- data.load.yr.win[data.load.yr.win$load<=cutoff[b] & data.load.yr.win
$load>=cutoff[b+1], ]
    block[b+10,1] <- round(mean(data.load.yr.win.block$load),0)
    block[b+10,2] <- dim(data.load.yr.win.block)[1]
  }
  block[11,1] <- round(max(data.load.yr.win$load),0)

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block[20,2] <- 5160-sum(block[c(11:19),2]) # sum to 5160
block <- as.data.frame(block)
block$block <- c(1:20)
block <- block[, c(3,1,2)]
block <- rbind(c("", "load", "hours"), block)
# == Output ==#
name.output <- paste("c:/my stuffs/my
  research/epa/capacityexpansion/model/screen_curve_PJM_ECAR_load_block_", year[y], "_
  1201.txt", sep="") # single LDC for PJM + ECAR
write.table(block, name.output, sep="\t", dimnames.write =F)
}
```

