PROGRAM:

```
clear all
close all
clc
data= [200     7.0     .008        10      85      .000218;
180     6.3     .009        10      80      .000228;
140     6.8     .007        10      70      .000179;];
const = data(:,1);
beta = data(:,2);
gamma = data(:,3);
pmin = data(:,4);
pmax = data(:,5);
ploss = data(:,6);
lambda = input('Enter the assumed value of lambda : \n');
p=zeros(3,1);
loss=0;
demand=input('Enter the demand : \n');
deltap=1;
iteration=0;
while abs(deltap)>.001
   iteration=iteration+1;
for i=1:3
   p(i)=(lambda-beta(i))/(2*[gamma(i)+lambda*ploss(i)]);
   loss=loss+ploss(i)*p(i)^2;
   loss1 = loss;
end
deltap=demand+loss-sum(p);
loss = 0;
if abs(deltap)>0
   k=0;
   for i=1:3
     k=k+(gamma(i)+ploss(i)*beta(i))/(2*[gamma(i)+lambda*ploss(i)]^2);
   end
end
   deltalambda=deltap/k;
lambda=lambda+deltalambda;
end
cost = 0;
for i = 1:3
   cost = cost + (const(i) + (beta(i)*p(i)) + (gamma(i)*p(i)*p(i)));
end
disp('The optimal value of generating units are')
disp(p);
disp ('The power loss of the system is')
disp(loss1)
disp ('The number of iterations taken to achieve optimum value are')
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```
disp(iteration);
disp ('The value of lambda for which optimum value is achieved is ')
disp(lambda);
disp('The total cost of the system is')
disp(cost)
```

OUTPUT:

```
Enter the assumed value of lambda : 8

Enter the demand : 150

The optimal value of generating units are

   35.0908

   64.1319

   52.4768

The power loss of the system is

    1.6991

The number of iterations taken to achieve optimum value are

     4

The value of lambda for which optimum value is achieved is

    7.6789

The total cost of the system is

   1.5927e+03
```