APPENDIX(A)

PLC program in structured text language (STL)

```
FB100 : Control Function of Section01 - Feeding System
Comment:
Hetwork 1: Calculate Max Calming Time of section
// Initiate Calming time
    L
         #Section01.Group.CalmTime Par #Section01.Group.CalmTime Par -- Gorup Max Calming Time during Stoppage
// Calculated Time delay
                                  #Pump1 Active
         #Pump1_Active
    JCN 101
       # 1KM01C.Motor.CalmTime Par # 1KM01C.Motor.CalmTime Par -- Motor Max Calming Time during stoppage
         #Section01.Group.CalmTime Par #Section01.Group.CalmTime Par -- Gorup Max Calming Time during Stoppage
    †Ι
         #Section01.Group.CalmTime Par #Section01.Group.CalmTime Par -- Gorup Max Calming Time during Stoppage
101: A
         #Pump2 Active
                                   #Pump2 Active
    JCN 102
         # 1KM02C.Motor.CalmTime Par # 1KM02C.Motor.CalmTime Par -- Motor Max Calming Time during stoppage
         †Ι
         #Pump3 Active
102: A
         #Pump3 Active
    JCN
         103
    L
         # 1KM03C.Motor.CalmTime Par # 1KM03C.Motor.CalmTime Par -- Motor Max Calming Time during stoppage
         #Section01.Group.CalmTime Par #Section01.Group.CalmTime Par -- Gorup Max Calming Time during Stoppage
    +I
```

FB100 : Control Function of Section01 - Feeding System

Comment:		
Metwork 1: Calculate Max Calming Time of section		
// Initiate Calming time		
L	0	
T	#Section01.Group.CalmTime_Par	#Section01.Group.CalmTime_Par Gorup Max Calming Time during Stoppage
// Calculated Time delay		
A JCN	<pre>#Pump1_Active _101</pre>	#Pump1_Active
L	#_1KM01C.Motor.CalmTime_Par	#_1KM01C.Motor.CalmTime_Par Motor Max Calming Time during stoppage
L +I	#Section01.Group.CalmTime_Par	#Section01.Group.CalmTime_Par Gorup Max Calming Time during Stoppage
T	#Section01.Group.CalmTime_Par	#Section01.Group.CalmTime_Par Gorup Max Calming Time during Stoppage
_101: A 	#Pump2_Active _102	#Pump2_Active
L	#_1KM02C.Motor.CalmTime_Par	#_1KM02C.Motor.CalmTime_Par Motor Max Calming Time during stoppage
L +I	#Section01.Group.CalmTime_Par	#Section01.Group.CalmTime_Par Gorup Max Calming Time during Stoppage
T	#Section01.Group.CalmTime_Par	#Section01.Group.CalmTime_Par Gorup Max Calming Time during Stoppage
_102: A	#Pump3_Active _103	#Pump3_Active
†I	#_1KM03C.Motor.CalmTime_Par #Section01.Group.CalmTime_Par	<pre>#_1KM03C.Motor.CalmTime_Par Motor Max Calming Time during stoppage #Section01.Group.CalmTime_Par Gorup Max Calming Time during Stoppage</pre>

FB100 : Control Function of Section01 - Feeding System

Comment: Metwork 1: Calculate Max Calming Time of section // Initiate Calming time L // Calculated Time delay #Pump1_Active #Pump1 Active 101 # 1KM01C.Motor.CalmTime Par # 1KM01C.Motor.CalmTime Par -- Motor Max Calming Time during stoppage #Section01.Group.CalmTime Par #Section01.Group.CalmTime Par -- Gorup Max Calming Time during Stoppage #Section01.Group.CalmTime Par #Section01.Group.CalmTime_Par -- Gorup Max Calming Time during Stoppage #Pump2 Active 101: A #Pump2 Active JCN 102 # 1KM02C.Motor.CalmTime Par # 1KM02C.Motor.CalmTime Par -- Motor Max Calming Time during stoppage L L #Section01.Group.CalmTime Par #Section01.Group.CalmTime Par -- Gorup Max Calming Time during Stoppage #Pump3 Active #Pump3 Active 102: A JCN 103 # 1KM03C.Motor.CalmTime Par # 1KM03C.Motor.CalmTime Par -- Motor Max Calming Time during stoppage +I

FB100 : Control Function of Section01 - Feeding System

Comment:

Metwork 1: Calculate Max Calming Time of section

```
// Initiate Calming time
     T
           #Section01.Group.CalmTime Par
                                           #Section01.Group.CalmTime Par -- Gorup Max Calming Time during Stoppage
// Calculated Time delay
     A
          #Pump1 Active
                                           #Pump1 Active
     JCN 101
         # 1KM01C.Motor.CalmTime Par
                                           # 1KM01C.Motor.CalmTime Par -- Motor Max Calming Time during stoppage
           #Section01.Group.CalmTime Par
                                           #Section01.Group.CalmTime Par -- Gorup Max Calming Time during Stoppage
     +I
                                           #Section01.Group.CalmTime Par -- Gorup Max Calming Time during Stoppage
     T
           #Section01.Group.CalmTime Par
101: A
         #Pump2_Active
                                           #Pump2 Active
     JCN 102
         # 1KM02C.Motor.CalmTime Par
                                           # 1KMO2C.Motor.CalmTime Par -- Motor Max Calming Time during stoppage
           #Section01.Group.CalmTime Par
                                           #Section01.Group.CalmTime Par -- Gorup Max Calming Time during Stoppage
     +I
                                           #Section01.Group.CalmTime Par -- Gorup Max Calming Time during Stoppage
     T
           #Section01.Group.CalmTime Par
102: A
                                          #Pump3_Active
           #Pump3 Active
     JCN 103
           # 1KM03C.Motor.CalmTime Par
                                           # 1KM03C.Motor.CalmTime Par -- Motor Max Calming Time during stoppage
           #Section01.Group.CalmTime Par
                                           #Section01.Group.CalmTime Par -- Gorup Max Calming Time during Stoppage
     +I
```

FB100 : Control Function of Section01 - Feeding System

Comment: Network 1: Calculate Max Calming Time of section

```
// Initiate Calming time
     L
     T
           #Section01.Group.CalmTime Par #Section01.Group.CalmTime Par -- Gorup Max Calming Time during Stoppage
// Calculated Time delay
                                           #Pump1 Active
           #Pump1 Active
      JCN
          101
           # 1KM01C.Motor.CalmTime Par
                                           # 1KM01C.Motor.CalmTime Par -- Motor Max Calming Time during stoppage
                                           #Section01.Group.CalmTime Par -- Gorup Max Calming Time during Stoppage
           #Section01.Group.CalmTime Par
     +I
     T
           #Section01.Group.CalmTime Par
                                           #Section01.Group.CalmTime Par -- Gorup Max Calming Time during Stoppage
_101: A
           #Pump2 Active
                                           #Pump2 Active
     JCN
          102
           # 1KM02C.Motor.CalmTime Par
                                           # 1KMO2C.Motor.CalmTime Par -- Motor Max Calming Time during stoppage
           #Section01.Group.CalmTime Par
                                           #Section01.Group.CalmTime Par -- Gorup Max Calming Time during Stoppage
     †Ι
     T
           #Section01.Group.CalmTime_Par
                                           #Section01.Group.CalmTime_Par -- Gorup Max Calming Time during Stoppage
                                           #Pump3 Active
102: A
           #Pump3 Active
           103
           # 1KM03C.Motor.CalmTime Par
                                           # 1KM03C.Motor.CalmTime Par -- Motor Max Calming Time during stoppage
           #Section01.Group.CalmTime Par
                                           #Section01.Group.CalmTime Par -- Gorup Max Calming Time during Stoppage
     +I
```

FB100 : Control Function of Section01 - Feeding System

Comment:

☐ Network 1: Calculate Max Calming Time of section

```
// Initiate Calming time
   L
      Ī
// Calculated Time delay
   A
      #Pump1 Active
                      #Pump1 Active
   JCN 101
      # 1KM01C.Motor.CalmTime Par
                     # 1KM01C.Motor.CalmTime Par -- Motor Max Calming Time during stoppage
      łΙ
      _101: A
                      #Pump2 Active
      #Pump2 Active
   JCN 102
      # 1KM02C.Motor.CalmTime Par
                      # 1KM02C.Motor.CalmTime Par -- Motor Max Calming Time during stoppage
                       #Section01.Group.CalmTime Par -- Gorup Max Calming Time during Stoppage
      #Section01.Group.CalmTime Par
   +I
      102: A
                      #Pump3 Active
      #Pump3 Active
   JCN 103
      # 1KMO3C.Motor.CalmTime Par # 1KMO3C.Motor.CalmTime Par -- Motor Max Calming Time during stoppage
      +I
```