0

SBR
Subroutine

NOP

1

Next State of the
Elevator
NEQ
Not Equal
Source A   Next_State
0
Source B   Current_State
0

Current State of the
elevator
MOV
Move
Source   Next_State
0
Dest   Current_State
0

2

S:FS

Current State of the
elevator
MOV
Move
Source   State_1_OUT
1
Dest   Current_State
0

Next State of the
Elevator
MOV
Move
Source   State_1_OUT
1
Dest   Next_State
0

3

Current State of the
elevator
EQU
Equal
Source A   Current_State
0
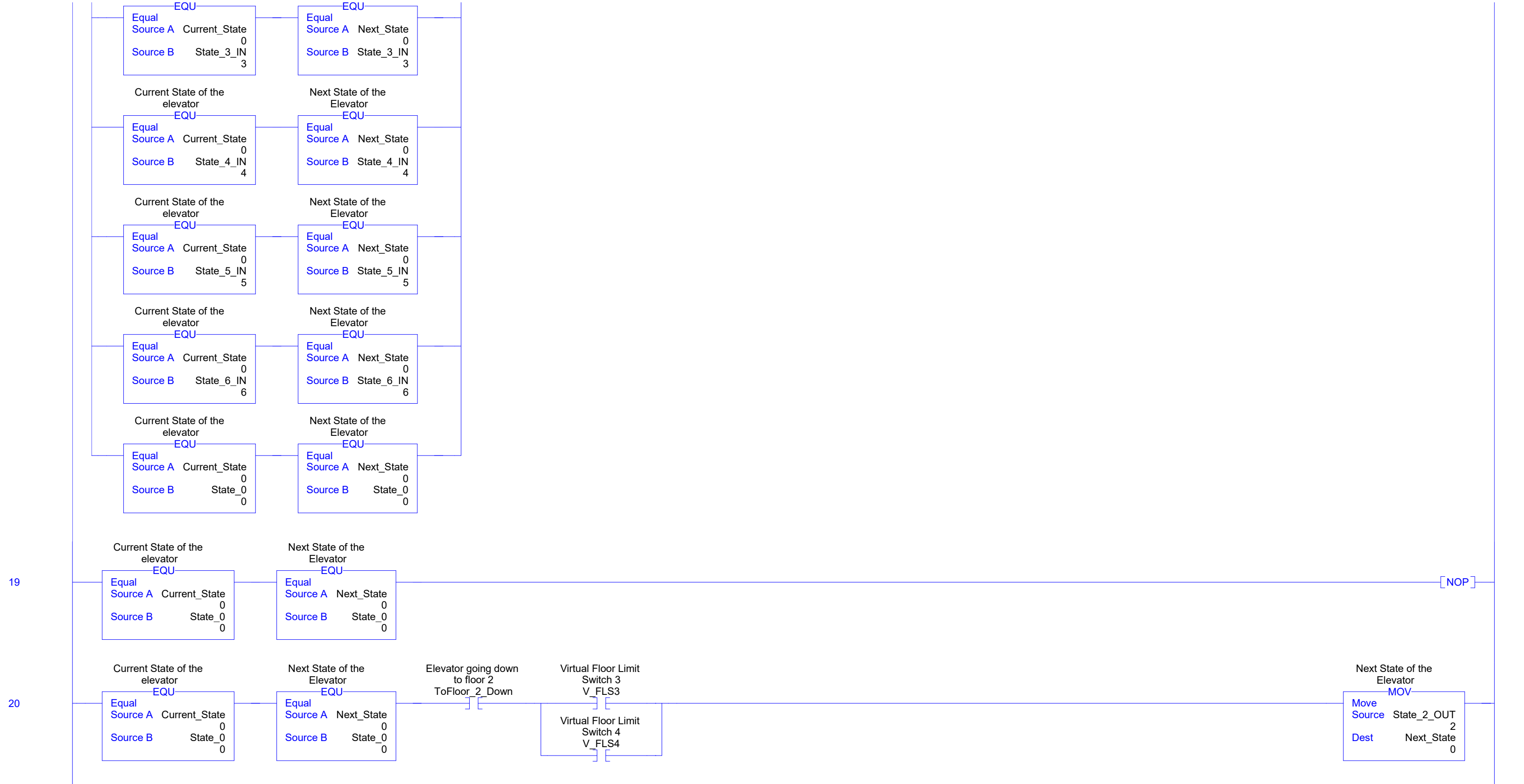Source B   State_Emergency_100
100

Next State of the
Elevator
EQU
Equal
Source A   Next_State
0
Source B   State_Emergency_100
100

Virtual Start Button
(N.O.)
V_START

Next State of the
Elevator
MOV
Move
Source   State_1_IN
1
Dest   Next_State
0

4

Emergency Stop the
elevator running
ESTOP

MCR

5

Current State of the
elevator
EQU
Equal
Source A   Current_State
0
Source B   State_0
0

Next State of the
Elevator
EQU
Equal
Source A   Next_State
0
Source B   State_0
0

Elevator going down
to floor 1
ToFloor_1_Down

Next State of the
Elevator
MOV
Move
Source   State_1_OUT
1
Dest   Next_State
0

6

Current State of the elevator
EQU
Equal
Source A   Current_State
                       0
Source B   State_1_OUT
                       1

Next State of the Elevator
EQU
Equal
Source A   Next_State
                        0
Source B   State_1_OUT
                        1

Virtual Floor Limit Switch 1
V_FLS1

Next State of the Elevator
MOV
Move
Source   State_0
                       0
Dest   Next_State
                       0

Current State of the elevator
EQU
Equal
Source A   Current_State
                       0
Source B   State_2_OUT
                       2

Next State of the Elevator
EQU
Equal
Source A   Next_State
                        0
Source B   State_2_OUT
                        2

Virtual Floor Limit Switch 2
V_FLS2

Current State of the elevator
EQU
Equal
Source A   Current_State
                       0
Source B   State_3_OUT
                       3

Next State of the Elevator
EQU
Equal
Source A   Next_State
                        0
Source B   State_3_OUT
                        3

Virtual Floor Limit Switch 2
V_FLS2

Current State of the elevator
EQU
Equal
Source A   Current_State
                       0
Source B   State_4_OUT
                       4

Next State of the Elevator
EQU
Equal
Source A   Next_State
                        0
Source B   State_4_OUT
                        4

Virtual Floor Limit Switch 3
V_FLS3

Current State of the elevator
EQU
Equal
Source A   Current_State
                       0
Source B   State_5_OUT
                       5

Next State of the Elevator
EQU
Equal
Source A   Next_State
                        0
Source B   State_5_OUT
                        5

Virtual Floor Limit Switch 3
V_FLS3

Current State of the elevator
EQU
Equal
Source A   Current_State
                       0
Source B   State_6_OUT
                       6

Next State of the Elevator
EQU
Equal
Source A   Next_State
                        0
Source B   State_6_OUT
                        6

Virtual Floor Limit Switch 4
V_FLS4

Current State of the elevator
EQU
Equal
Source A   Current_State
                       0
Source B   State_1_IN
                       1

Next State of the Elevator
EQU
Equal
Source A   Next_State
                    0
Source B   State_1_IN
                    1

Virtual Floor Limit Switch 1
V_FLS1

Current State of the elevator
EQU
Equal
Source A   Current_State
                       0
Source B   State_2_IN
                       2

Next State of the Elevator
EQU
Equal
Source A   Next_State
                    0
Source B   State_2_IN
                    2

Virtual Floor Limit Switch 2
V_FLS2

Current State of the elevator

Next State of the Elevator

Virtual Floor Limit Switch 2

Rung 10

Current State of the elevator — EQU Equal, Source A Current_State 0, Source B State_0 0

Next State of the Elevator — EQU Equal, Source A Next_State 0, Source B State_0 0

Elevator going up to floor 4 — ToFloor_4_Up

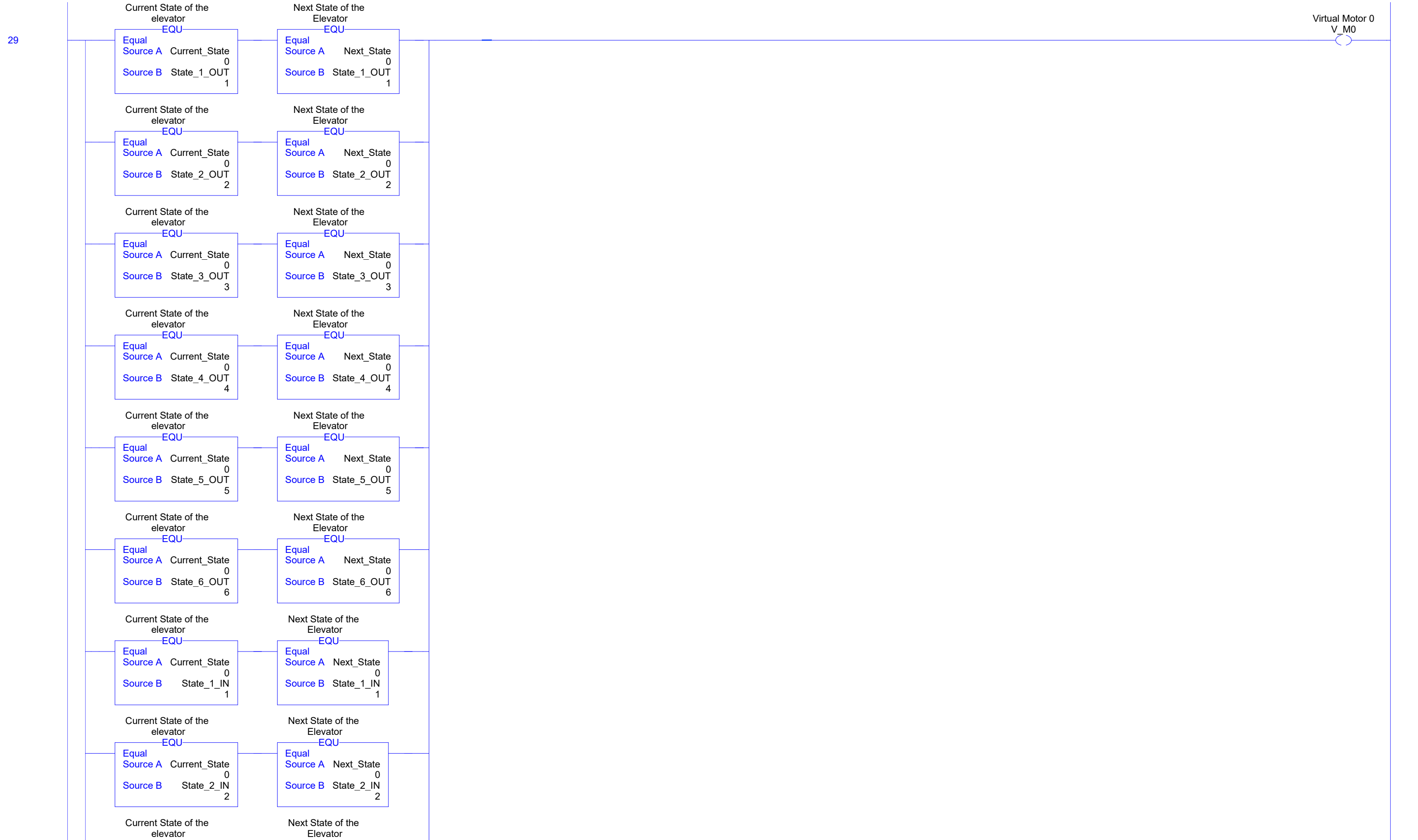Next State of the Elevator — MOV Move, Source State_6_OUT 6, Dest Next_State 0

Rung 11

Current State of the elevator — EQU Equal, Source A Current_State 0, Source B State_0 0

Next State of the Elevator — EQU Equal, Source A Next_State 0, Source B State_0 0

[NOP]

Rung 12

Current State of the elevator — EQU Equal, Source A Current_State 0, Source B State_0 0

Next State of the Elevator — EQU Equal, Source A Next_State 0, Source B State_0 0

Virtual Pushbutton 1 — V_PB1

Next State of the Elevator — MOV Move, Source State_1_IN 1, Dest Next_State 0

Rung 13

Current State of the elevator — EQU Equal, Source A Current_State 0, Source B State_0 0

Next State of the Elevator — EQU Equal, Source A Next_State 0, Source B State_0 0

Virtual Pushbutton 2 — V_PB2

Virtual Floor Limit Switch 3 — V_FLS3 / Virtual Floor Limit Switch 4 — V_FLS4

Next State of the Elevator — MOV Move, Source State_2_IN 2, Dest Next_State 0

Rung 14

Current State of the elevator — EQU Equal, Source A Current_State 0, Source B State_0 0

Next State of the Elevator — EQU Equal, Source A Next_State 0, Source B State_0 0

Virtual Pushbutton 2 — V_PB2

Virtual Floor Limit Switch 1 — V_FLS1

Next State of the Elevator — MOV Move, Source State_3_IN 3, Dest Next_State 0

Rung 15

Current State of the elevator — EQU Equal, Source A Current_State 0, Source B State_0 0

Next State of the Elevator — EQU Equal, Source A Next_State 0, Source B State_0 0

Virtual Pushbutton 3 — V_PB3

Virtual Floor Limit Switch 2 — V_FLS2 / Virtual Floor Limit Switch 1 — V_FLS1

Next State of the Elevator — MOV Move, Source State_4_IN 4, Dest Next_State 0

Rung 16

Current State of the elevator — EQU Equal, Source A Current_State 0, Source B State_0 0

Next State of the Elevator — EQU Equal, Source A Next_State 0, Source B State_0 0

Virtual Pushbutton 3 — V_PB3

Virtual Floor Limit Switch 4 — V_FLS4

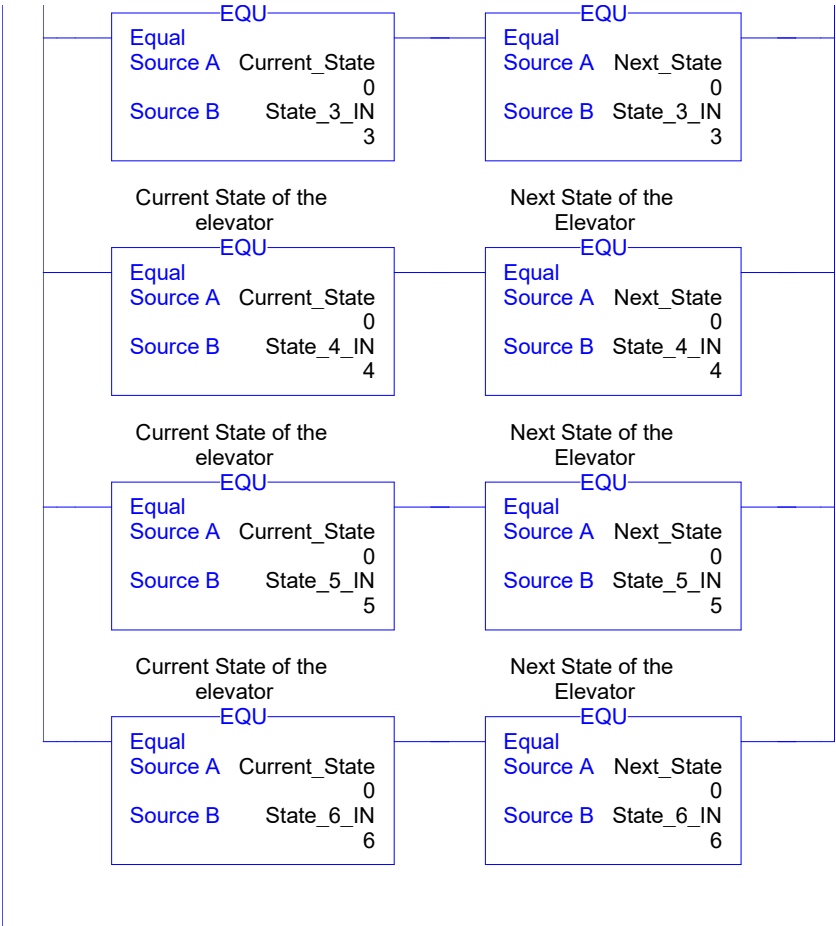Next State of the Elevator — MOV Move, Source State_5_IN 5, Dest Next_State 0

17

Current State of the
elevator
EQU
Equal
Source A   Current_State
0
Source B   State_0
0

Next State of the
Elevator
EQU
Equal
Source A   Next_State
0
Source B   State_0
0

Virtual Pushbutton 4
V_PB4

Next State of the
Elevator
MOV
Move
Source   State_6_IN
6
Dest   Next_State
0

18

Current State of the elevator
EQU
Equal
Source A Current_State
0
Source B State_1_OUT
1

Next State of the Elevator
EQU
Equal
Source A Next_State
0
Source B State_1_OUT
1

Virtual Pushbutton Emergency 5
V_PBE5

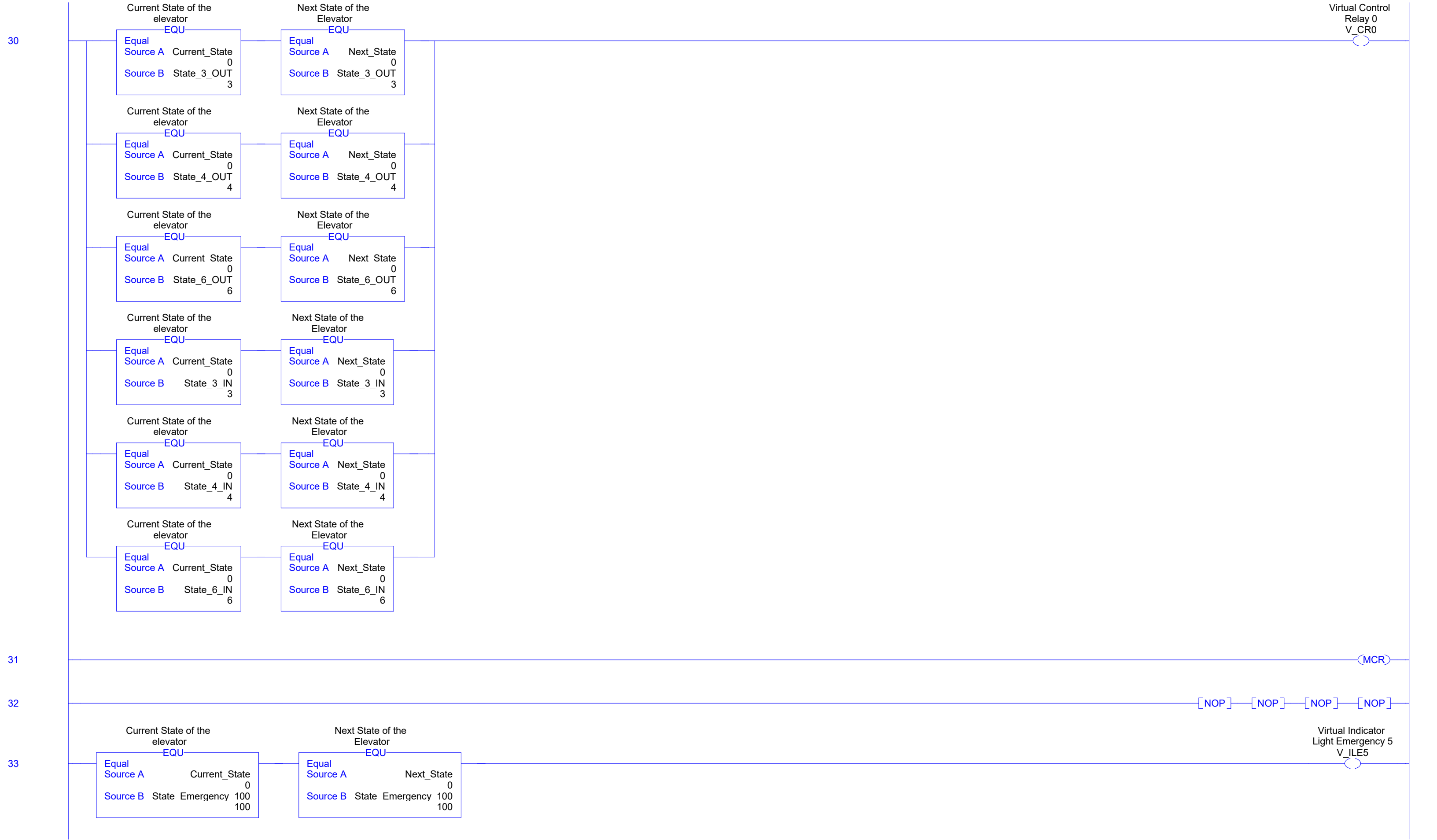Next State of the Elevator
MOV
Move
Source State_Emergency_100
100
Dest Next_State
0

Current State of the elevator
EQU
Equal
Source A Current_State
0
Source B State_2_OUT
2

Next State of the Elevator
EQU
Equal
Source A Next_State
0
Source B State_2_OUT
2

Current State of the elevator
EQU
Equal
Source A Current_State
0
Source B State_3_OUT
3

Next State of the Elevator
EQU
Equal
Source A Next_State
0
Source B State_3_OUT
3

Current State of the elevator
EQU
Equal
Source A Current_State
0
Source B State_4_OUT
4

Next State of the Elevator
EQU
Equal
Source A Next_State
0
Source B State_4_OUT
4

Current State of the elevator
EQU
Equal
Source A Current_State
0
Source B State_5_OUT
5

Next State of the Elevator
EQU
Equal
Source A Next_State
0
Source B State_5_OUT
5

Current State of the elevator
EQU
Equal
Source A Current_State
0
Source B State_6_OUT
6

Next State of the Elevator
EQU
Equal
Source A Next_State
0
Source B State_6_OUT
6

Current State of the elevator
EQU
Equal
Source A Current_State
0
Source B State_1_IN
1

Next State of the Elevator
EQU
Equal
Source A Next_State
0
Source B State_1_IN
1

Current State of the elevator
EQU
Equal
Source A Current_State
0
Source B State_2_IN
2

Next State of the Elevator
EQU
Equal
Source A Next_State
0
Source B State_2_IN
2

Current State of the elevator
EQU

Next State of the Elevator
EQU

Current State of the elevator
EQU — Equal
Source A Current_State 0
Source B State_3_IN 3

Next State of the Elevator
EQU — Equal
Source A Next_State 0
Source B State_3_IN 3

Current State of the elevator
EQU — Equal
Source A Current_State 0
Source B State_4_IN 4

Next State of the Elevator
EQU — Equal
Source A Next_State 0
Source B State_4_IN 4

Current State of the elevator
EQU — Equal
Source A Current_State 0
Source B State_5_IN 5

Next State of the Elevator
EQU — Equal
Source A Next_State 0
Source B State_5_IN 5

Current State of the elevator
EQU — Equal
Source A Current_State 0
Source B State_6_IN 6

Next State of the Elevator
EQU — Equal
Source A Next_State 0
Source B State_6_IN 6

Current State of the elevator
EQU — Equal
Source A Current_State 0
Source B State_0 0

Next State of the Elevator
EQU — Equal
Source A Next_State 0
Source B State_0 0

19

Current State of the elevator
EQU — Equal
Source A Current_State 0
Source B State_0 0

Next State of the Elevator
EQU — Equal
Source A Next_State 0
Source B State_0 0

— NOP —

20

Current State of the elevator
EQU — Equal
Source A Current_State 0
Source B State_0 0

Next State of the Elevator
EQU — Equal
Source A Next_State 0
Source B State_0 0

Elevator going down to floor 2
ToFloor_2_Down

Virtual Floor Limit Switch 3
V_FLS3

Virtual Floor Limit Switch 4
V_FLS4

Next State of the Elevator
MOV — Move
Source State_2_OUT 2
Dest Next_State 0

Floor_FSM - Ladder Diagram
StartingFile_EX:MainTask:MainProgram
Total number of rungs in routine: 36

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21

Current State of the elevator
EQU
Equal
Source A Current_State
0
Source B State_1_IN
1

Next State of the Elevator
EQU
Equal
Source A Next_State
0
Source B State_1_IN
1

Virtual Indicator Light 1
V_IL1

22

Current State of the elevator
EQU
Equal
Source A Current_State
0
Source B State_2_IN
2

Next State of the Elevator
EQU
Equal
Source A Next_State
0
Source B State_2_IN
2

Virtual Indicator Light 2
V_IL2

Current State of the elevator
EQU
Equal
Source A Current_State
0
Source B State_3_IN
3

Next State of the Elevator
EQU
Equal
Source A Next_State
0
Source B State_3_IN
3

23

Current State of the elevator
EQU
Equal
Source A Current_State
0
Source B State_4_IN
4

Next State of the Elevator
EQU
Equal
Source A Next_State
0
Source B State_4_IN
4

Virtual Indicator Light 3
V_IL3

Current State of the elevator
EQU
Equal
Source A Current_State
0
Source B State_5_IN
5

Next State of the Elevator
EQU
Equal
Source A Next_State
0
Source B State_5_IN
5

24

Current State of the elevator
EQU
Equal
Source A Current_State
0
Source B State_6_IN
6

Next State of the Elevator
EQU
Equal
Source A Next_State
0
Source B State_6_IN
6

Virtual Indicator Light 4
V_IL4

25

Floor flags indicating a call on floor 1
Floor_Call_1

Virtual Floor Indicator Light 1
V_FIL1

26

Floor flags indicating a call on floor 2
Floor_Call_2

Virtual Floor Indicator Light 2
V_FIL2

27

Floor flags
indicating a call on
floor 3
Floor_Call_3

Virtual Floor
Indicator Light 3
V_FIL3

28

Floor flags
indicating a call on
floor 4
Floor_Call_4

Virtual Floor
Indicator Light 4
V_FIL4

Floor_FSM - Ladder Diagram
StartingFile_EX:MainTask:MainProgram
Total number of rungs in routine: 36

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Current State of the elevator	Next State of the Elevator	Virtual Motor 0
EQU Equal Source A Current_State 0 Source B State_1_OUT 1	EQU Equal Source A Next_State 0 Source B State_1_OUT 1	V_M0

Current State of the elevator	Next State of the Elevator
EQU Equal Source A Current_State 0 Source B State_2_OUT 2	EQU Equal Source A Next_State 0 Source B State_2_OUT 2

Current State of the elevator	Next State of the Elevator
EQU Equal Source A Current_State 0 Source B State_3_OUT 3	EQU Equal Source A Next_State 0 Source B State_3_OUT 3

Current State of the elevator	Next State of the Elevator
EQU Equal Source A Current_State 0 Source B State_4_OUT 4	EQU Equal Source A Next_State 0 Source B State_4_OUT 4

Current State of the elevator	Next State of the Elevator
EQU Equal Source A Current_State 0 Source B State_5_OUT 5	EQU Equal Source A Next_State 0 Source B State_5_OUT 5

Current State of the elevator	Next State of the Elevator
EQU Equal Source A Current_State 0 Source B State_6_OUT 6	EQU Equal Source A Next_State 0 Source B State_6_OUT 6

Current State of the elevator	Next State of the Elevator
EQU Equal Source A Current_State 0 Source B State_1_IN 1	EQU Equal Source A Next_State 0 Source B State_1_IN 1

Current State of the elevator	Next State of the Elevator
EQU Equal Source A Current_State 0 Source B State_2_IN 2	EQU Equal Source A Next_State 0 Source B State_2_IN 2

Current State of the elevator	Next State of the Elevator

EQU
Equal
Source A   Current_State
                       0
Source B   State_3_IN
                       3

Current State of the
elevator

EQU
Equal
Source A   Next_State
                     0
Source B   State_3_IN
                     3

Next State of the
Elevator

EQU
Equal
Source A   Current_State
                       0
Source B   State_4_IN
                       4

Current State of the
elevator

EQU
Equal
Source A   Next_State
                     0
Source B   State_4_IN
                     4

Next State of the
Elevator

EQU
Equal
Source A   Current_State
                       0
Source B   State_5_IN
                       5

Current State of the
elevator

EQU
Equal
Source A   Next_State
                     0
Source B   State_5_IN
                     5

Next State of the
Elevator

EQU
Equal
Source A   Current_State
                       0
Source B   State_6_IN
                       6

EQU
Equal
Source A   Next_State
                     0
Source B   State_6_IN
                     6

Floor_FSM - Ladder Diagram
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StartingFile_EX:MainTask:MainProgram
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Total number of rungs in routine: 36
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Rung 30:

Current State of the elevator — EQU (Equal, Source A Current_State 0, Source B State_3_OUT 3)
Next State of the Elevator — EQU (Equal, Source A Next_State 0, Source B State_3_OUT 3)
Virtual Control Relay 0 — V_CR0

Current State of the elevator — EQU (Equal, Source A Current_State 0, Source B State_4_OUT 4)
Next State of the Elevator — EQU (Equal, Source A Next_State 0, Source B State_4_OUT 4)

Current State of the elevator — EQU (Equal, Source A Current_State 0, Source B State_6_OUT 6)
Next State of the Elevator — EQU (Equal, Source A Next_State 0, Source B State_6_OUT 6)

Current State of the elevator — EQU (Equal, Source A Current_State 0, Source B State_3_IN 3)
Next State of the Elevator — EQU (Equal, Source A Next_State 0, Source B State_3_IN 3)

Current State of the elevator — EQU (Equal, Source A Current_State 0, Source B State_4_IN 4)
Next State of the Elevator — EQU (Equal, Source A Next_State 0, Source B State_4_IN 4)

Current State of the elevator — EQU (Equal, Source A Current_State 0, Source B State_6_IN 6)
Next State of the Elevator — EQU (Equal, Source A Next_State 0, Source B State_6_IN 6)

Rung 31: (MCR)

Rung 32: [NOP] [NOP] [NOP] [NOP]

Rung 33:

Current State of the elevator — EQU (Equal, Source A Current_State 0, Source B State_Emergency_100 100)
Next State of the Elevator — EQU (Equal, Source A Next_State 0, Source B State_Emergency_100 100)
Virtual Indicator Light Emergency 5 — V_ILE5

```
              Current State of the                    Next State of the                              Emergency Stop the
                   elevator                                Elevator                                   elevator running
                    EQU                                     EQU                                            ESTOP
34      ┌─────────────────────────┐       ┌─────────────────────────┐                                      ( )
        │ Equal                   │       │ Equal                   │
        │ Source A   Current_State│       │ Source A      Next_State│
        │                        0│       │                        0│
        │ Source B State_Emergency_100     │ Source B State_Emergency_100
        │                      100│       │                      100│
        └─────────────────────────┘       └─────────────────────────┘

                                                                                                          RET
35                                                                                               ┌─────────────────────┐
                                                                                                 │ Return from Subroutine│
                                                                                                 └─────────────────────┘

(End)
```